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SHARP 14AP1 SERVICE MANUAL

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SHARP SERVICE MANUAL

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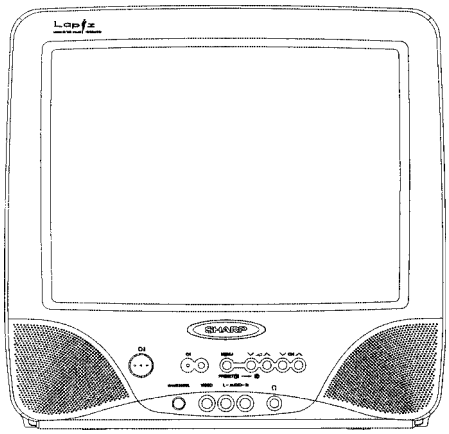

COLOUR TELEVISION
Chassis No. UA-1

MODEL 14AP1

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

FEATURE

- Favourite Channel
- Full Auto Channel Preset and Auto Channel Skip
- 100-CH Program Memory
- CATV(Hyper Band) Ready <Used Frequency Synthesizer Tuner>
- AVL(Sound Keeper) Function
- Black Stretch Circuit
- On Timer/Sleep Timer/Reminder Timer
- Blue Back Noise Mute
- Front AV-In & Rear AV-In/Out Terminals
- Colour Comb Filter (NTSC Only)
- High Contrast Picture
- Hotel Mode
- Front Headphone Jack
- Monobilingual
- AV Stereo
- Surround System
- Game Switch Function

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WARNING

The chassis in this receiver is partially hot. Use an isolation transformer between the line cord plug and power receptacle, when servicing this chassis. To prevent electric shock, do not remove cover. No user – serviceable parts inside. Refer servicing to qualified service personnel.

SHARP CORPORATION

SPECIFICATIONS

Convergence ..... Self Convergence System
Focus ..... Quadra-Potential Electrostatic
Sweep Deflection ..... Magnetic

Intermediate Frequencies
  Picture IF Carrier ..... 38.9 MHz
  Sound IF Carrier Frequency
    5.74 MHz ..... 33.16 MHz
    5.50 MHz ..... 33.40 MHz
  Colour Sub-Carrier Frequency ..... 34.47 MHz

Power Input ..... 110 ~ 240 V AC 50/60 Hz
Power Consumption ..... 62 W
Audio Power Output Rating ..... 2.0 W × 2
Speaker
  Size ..... 5 × 9 cm (2 pcs)
  Voice Coil Impedance ..... 16 ohms at 400 Hz

Aerial Input Impedance
  VHF/UHF ..... 75 ohms Unbalanced
Receiving System ..... CCIR/PAL B, G
Tuner Ranges
  •VHF-Channels ..... E2 (48.25 MHz) thru E12 (224.25 MHz)
  •UHF-Channels ..... E21 (471.25 MHz) thru E69 (855.25 MHz)

Dimensions ..... Width: 367.0 mm
Height: 353.0 mm
Depth: 377.0 mm
Weight (approx.): 17.6 kg
Cabinet material ..... All Plastics

Specifications are subject to change without prior notice.

IMPORTANT SERVICE NOTES

Maintenance and repair of this receiver should be done by qualified service personnel only.

SERVICE OF HIGH VOLTAGE SYSTEM AND PICTURE TUBE

When servicing the high voltage system, remove static charge from it by Connecting a 10K ohm Resistor in series with an insulated wire(such as a test probe) between picture tube dag and 2nd anode lead. (AC line cord should be disconnected from AC outlet.)

1. **Picture tube in this receiver employs integral implosion protection.**
2. **Replace with tube of the same type number for continued safety.**
3. **Do not lift picture tube by the neck.**
4. **Handle the picture tube only when wearing shatterproof goggles and after discharging the high voltage completely.**

X-RAY

This receiver is designed so that any X-Ray radiation is kept to an absolute Minimum. Since certain malfunctions or servicing may produce potentially hazardous radiation with prolonged exposure at close range, the following precautions should be observed:

1. **When repairing the circuit, be sure not to increase the high voltage to more than 25.8kV (at beam 0 μA) for the set.**
2. **To keep the set in a normal opeartion , be sure to make it function on 22.8kV ±1.5kV (at beam 800 μA) in the case of the set. The set has been factory - Adjusted to the above-mentioned high voltage.**
   ∴ If there is a possibility that the high voltage fluctuates as a result of the repairs, never forget to check for such high voltage after the work.
3. **Do not substitute a picture tube with unauthorizerd types and/or brands which may cause excess X-ray radiation.**

BEFORE RETURNING THE RECEIVER

Before returning the receiver to the user, perform the following safety Checks.

1. **Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the receiver.**
2. **Inspect all protective devices such as non-metallic control knobs, insulating fishpapers, cabinet backs, adjustment and compartment covers or shields, isolation resistor- capacity networks, mechanical insulators etc.**

ADJUSTMENT PRECAUTIONS

This model's setting are adjusted in two different ways: through the I²C bus control and in the conventional analog manner. The adjustments via the I²C bus control include preset-only items and variable data.

1. Setting the service mode by the microprocessor.

①. Short JA 122 & JA 124 for 1 second and release to switch to the service mode position, and the microprocessor is in input mode. (Adjustment through the I²C bus control). (Use JWS Key to set as well).

②. Press the CH DOWN / UP key on the remote controller to get ready to select the mode one by one.

③. Press the CH DOWN / UP key on the remote controller to select the modes reversibly one by one.

④. Using the VOLUME UP/ DOWN key on the remote controller, the data can be modified.

⑤. Short JA 122 & JA 124 for 1 second and release to switch to the normal mode (OFF) position, and the microprocessor is in out of the service mode.

2. Factory Presetting.

①. Short JA 122 & JA 124 for 1 second and release to switch to the service mode position and turn on the main power switch.Initial values are automatically preset, only when a new EEPROM is used (Judge with the first 4 bytes).

②. The initial data are preset as listed in page 5, 6 & 7.

③. Make sure the data need modify or not (Initial data).

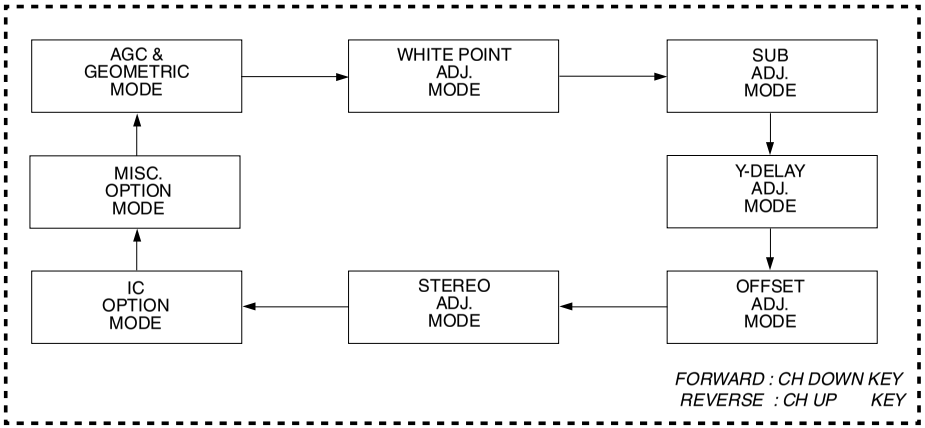
Note: Once the chassis has been assembly together and ready to be POWER ON for the FIRST TIME, make sure to short JA122 & JA124 to switch to the service mode position first and then turn on the main power switch (See 2-① above).

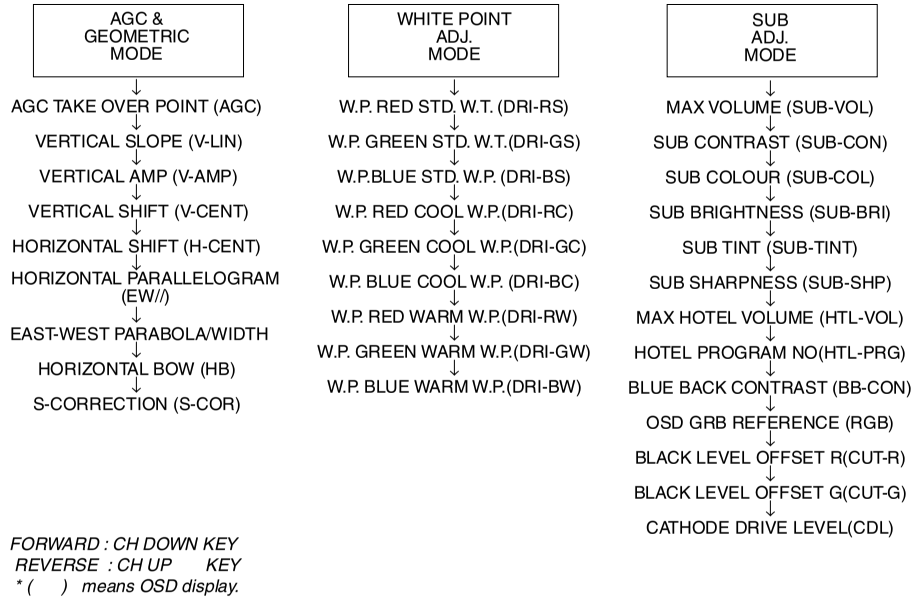
Precaution: If haven't done this initiation, it may possibly generate excessive Beam current.

3. For reference please check with memory map (UA1 Series type RH-IX3411CE Attachment)

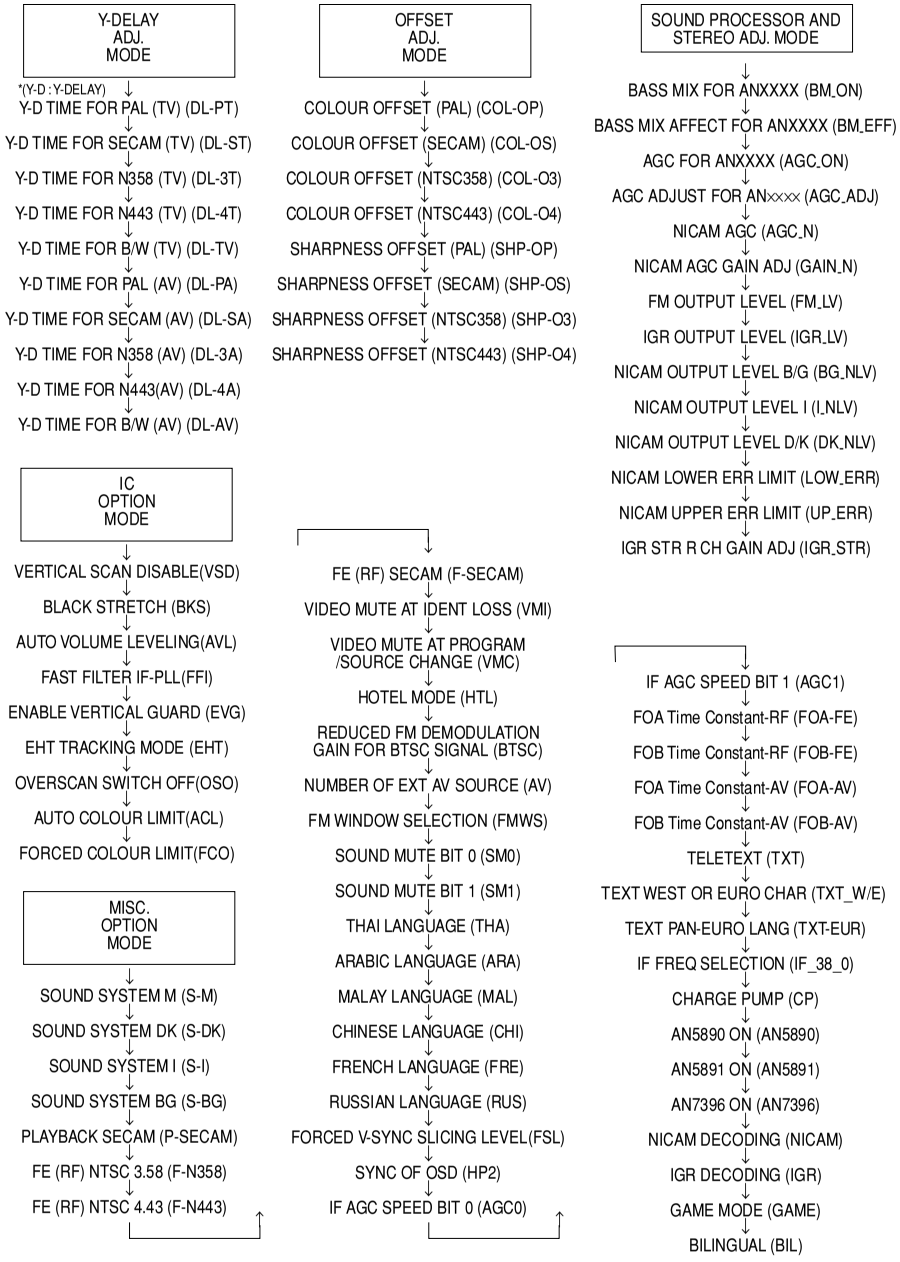
■ SERVICE MODE

(1) In the Service Mode, Key is used to select the mode in the following order.





FORWARD : CH DOWN KEY
REVERSE : CH UP KEY
** ( ) means OSD display.*


Y-DELAY ADJ. MODE
*(Y-D : Y-DELAY)
Y-D TIME FOR PAL (TV) (DL-PT)
Y-D TIME FOR SECAM (TV) (DL-ST)
Y-D TIME FOR N358 (TV) (DL-3T)
Y-D TIME FOR N443 (TV) (DL-4T)
Y-D TIME FOR B/W (TV) (DL-TV)
Y-D TIME FOR PAL (AV) (DL-PA)
Y-D TIME FOR SECAM (AV) (DL-SA)
Y-D TIME FOR N358 (AV) (DL-3A)
Y-D TIME FOR N443(AV) (DL-4A)
Y-D TIME FOR B/W (AV) (DL-AV)
OFFSET ADJ. MODE
COLOUR OFFSET (PAL) (COL-OP)
COLOUR OFFSET (SECAM) (COL-OS)
COLOUR OFFSET (NTSC358) (COL-O3)
COLOUR OFFSET (NTSC443) (COL-O4)
SHARPNESS OFFSET (PAL) (SHP-OP)
SHARPNESS OFFSET (SECAM) (SHP-OS)
SHARPNESS OFFSET (NTSC358) (SHP-O3)
SHARPNESS OFFSET (NTSC443) (SHP-O4)
SOUND PROCESSOR AND STEREO ADJ. MODE
BASS MIX FOR ANXXXX (BM_ON)
BASS MIX AFFECT FOR ANXXXX (BM_EFF)
AGC FOR ANXXXX (AGC_ON)
AGC ADJUST FOR ANxxxx (AGC_ADJ)
NICAM AGC (AGC_N)
NICAM AGC GAIN ADJ (GAIN_N)
FM OUTPUT LEVEL (FM_LV)
IGR OUTPUT LEVEL (IGR_LV)
NICAM OUTPUT LEVEL B/G (BG_NLV)
NICAM OUTPUT LEVEL I (I_NLV)
NICAM OUTPUT LEVEL D/K (DK_NLV)
NICAM LOWER ERR LIMIT (LOW_ERR)
NICAM UPPER ERR LIMIT (UP_ERR)
IGR STR R CH GAIN ADJ (IGR_STR)
IC OPTION MODE
VERTICAL SCAN DISABLE(VSD)
BLACK STRETCH (BKS)
AUTO VOLUME LEVELING(AVL)
FAST FILTER IF-PLL(FFI)
ENABLE VERTICAL GUARD (EVG)
EHT TRACKING MODE (EHT)
OVERSCAN SWITCH OFF(OSO)
AUTO COLOUR LIMIT(ACL)
FORCED COLOUR LIMIT(FCO)
FE (RF) SECAM (F-SECAM)
VIDEO MUTE AT IDENT LOSS (VMI)
VIDEO MUTE AT PROGRAM /SOURCE CHANGE (VMC)
HOTEL MODE (HTL)
REDUCED FM DEMODULATION GAIN FOR BTSC SIGNAL (BTSC)
NUMBER OF EXT AV SOURCE (AV)
FM WINDOW SELECTION (FMWS)
SOUND MUTE BIT 0 (SM0)
SOUND MUTE BIT 1 (SM1)
THAI LANGUAGE (THA)
ARABIC LANGUAGE (ARA)
MALAY LANGUAGE (MAL)
CHINESE LANGUAGE (CHI)
FRENCH LANGUAGE (FRE)
RUSSIAN LANGUAGE (RUS)
FORCED V-SYNC SLICING LEVEL(FSL)
SYNC OF OSD (HP2)
IF AGC SPEED BIT 0 (AGC0)
IF AGC SPEED BIT 1 (AGC1)
FOA Time Constant-RF (FOA-FE)
FOB Time Constant-RF (FOB-FE)
FOA Time Constant-AV (FOA-AV)
FOB Time Constant-AV (FOB-AV)
TELETEXT (TXT)
TEXT WEST OR EURO CHAR (TXT_W/E)
TEXT PAN-EURO LANG (TXT-EUR)
IF FREQ SELECTION (IF_38_0)
CHARGE PUMP (CP)
AN5890 ON (AN5890)
AN5891 ON (AN5891)
AN7396 ON (AN7396)
NICAM DECODING (NICAM)
IGR DECODING (IGR)
GAME MODE (GAME)
BILINGUAL (BIL)
MISC. OPTION MODE
SOUND SYSTEM M (S-M)
SOUND SYSTEM DK (S-DK)
SOUND SYSTEM I (S-I)
SOUND SYSTEM BG (S-BG)
PLAYBACK SECAM (P-SECAM)
FE (RF) NTSC 3.58 (F-N358)
FE (RF) NTSC 4.43 (F-N443)

USER DATA IN SERVICE MODE

*While SERVICE mode ON, EEPROM DATA will switch to the service data.
Also, once SERVICE mode OFF, EEPROM will switch back to previous USER DATA.
*In the service mode, the user data establish as below,

	USER DATA
CONTRAST	MAX
COLOUR	CENTER
BRIGHTNESS	CENTER
TINT	CENTER
SHARPNESS	CENTER
WHITE TEMP	STANDARD
S-VOLUME	MAX
BLUE BACK	OFF
C-SYSTEM	AUTO
S-SYSTEM	B/G

The flow of Mode lists as following,
* Direct Key-in Step1 Mode

RC COMMAND	SERVICE-ITEM
STANDBY/ON	STANDBY
TV/VIDEO	NEXT SOURCE
DIGIT 0°	DIGIT 0 · 9
AV1	SELECT AV1
AV2	SELECT AV2
-/--	1/2 DIGIT ENTRY
FUNCTION FSET	AGC
TIMER TSET	SUB-VOL
TXT/MIX	DRI-GS
PIC	DRI-BS
HOLD	DRI-GC
CANCEL	DRI-GW
SIZE	DRI-RC
REVEAL	DRI-BW
RED	CUT-R
GREEN	CUT-G
BLUE BACK	S-COR
S-SYSTEM	HB
CONTRAST+	SUB-CON
CONTRAST-	V-LIN
COLOUR+	SUB-COL
COLOUR-	V-AMP
BRIGHTNESS+	SUB-BRI
BRIGHTNESS-	V-CENT
TINT+	SUB-TINT
TINT-	H-CENT
SHARPNESS+	SUB-SHP
SHARPNESS-	EW//
BASS+	TRAPE
BASS-	COR (L)
TREBLE+	PARA
TREBLE-	COR (U)

AFTER SHORT JA 122 & JA 124 ,AND TURN ON THE MAIN POWER SWITCH,READ DATA FROM EEPROM ADDRESS 00H ~ 03H,AND COMPARE TO THE LIST BELOW, IF DIFFERENT, INITIALIZE THE EEPROM.

ADDRESS	:	DATA	ADDRESS	:	DATA
00H	:	55H	02H	:	53H
01H	:	41H	03H	:	54H

EEPROM ITEMS	OSD	DATA LENGTH	INITIAL DATA	FIX/ADJ	REMARK
AGC TAKE OVER POINT	AGC	0~63	14	ADJ	
VERTICAL SLOPE	V-LIN	0~63	32	ADJ	
VERTICAL AMPLITUDE	V-AMP	0~63	32	ADJ	
VERTICAL SHIFT	V-CENT	0~63	32	ADJ	
HORIZONTAL SHIFT	H-CENT	0~63	32	ADJ	
HORIZONTAL SIZE	H-SIZE	0~63	32	FIX	NO EFFECT
HORIZONTAL PARALLELOGRAM	EW//	0~63	32	FIX	NO EFFECT
EAST-WEST PARABOLA/WIDTH	PARA	0~63	32	FIX	NO EFFECT
CORRECTION UPPER	COR (U)	0~63	32	FIX	NO EFFECT
CORRECTION LOWER	COR (L)	0~63	32	FIX	NO EFFECT
TRAPEZIUM	TRAPE	0~63	32	FIX	NO EFFECT
HORIZONTAL BOW	HB	0~63	32	FIX	NO EFFECT
S-CORRECTION	S-COR	0~63	0	FIX	
WHITE POINT RED STD WHITE TEMP	DRI-RS	0~63	32	FIX	
WHITE POINT GREEN STD WHITE TEMP	DRI-GS	0~63	32	ADJ	
WHITE POINT BLUE STD WHITE TEMP	DRI-BS	0~63	32	ADJ	
WHITE POINT RED WARM WHITE TEMP	DRI-RW	0~63	32	FIX	
WHITE POINT GREEN WARM WHITE TEMP	DRI-GW	0~63	32	FIX	(DRI-GS)-7 DATA
WHITE POINT BLUE WARM WHITE TEMP	DRI-BW	0~63	32	FIX	(DRI-BS)-7 DATA
WHITE POINT RED COOL WHITE TEMP	DRI-RC	0~63	25	FIX	(DRI-RS)-7 DATA
WHITE POINT GREEN COOL WHITE TEMP	DRI-GC	0~63	32	FIX	(DRI-GS)-7 DATA
WHITE POINT BLUE COOL WHITE TEMP	DRI-BC	0~63	32	FIX	(DRI-BS)SAME DATA
MAX VOLUME	SUB-VOL	0~60	60	FIX	
SUB CONTRAST	SUB-CON	0~63	63	FIX	
SUB COLOUR	SUB-COL	0~63	32	ADJ	
SUB BRIGHTNESS	SUB-BRI	0~63	32	ADJ	
SUB TINT	SUB-TINT	0~63	32	ADJ	
SUB SHARPNESS	SUB-SHP	0~63	32	FIX	
MAX HOTEL VOLUME	HTL-VOL	0~60	30	FIX	*1
HOTEL PROGRAM NUMBER	HTL-PRG	0~99 OR>99FOR NONE	255	FIX	
BLUE BACK CONTRAST	BB-CON	0~15	10	FIX	
OSD RGB REFERENCE	RGB	0~15	15	FIX	
BLACK LEVEL OFF-SET R	CUT-R	0~15	8	ADJ	
BLACK LEVEL OFF-SET G	CUT-G	0~15	8	ADJ	
CATHODE DRIVE LEVEL	CDL	0~15	0	FIX	
Y-DELAY TIME FOR PAL(TV) [YD]	DL-PT	0~15	12	FIX	
Y-DELAY TIME FOR SECAM(TV) [YD]	DL-ST	0~15	15	FIX	
Y-DELAY TIME FOR N358 (TV) [YD]	DL-3T	0~15	12	FIX	
Y-DELAY TIME FOR N443 (TV) [YD]	DL-4T	0~15	12	FIX	
Y-DELAY TIME FOR B/W (TV) [YD]	DL-TV	0~15	12	FIX	
Y-DELAY TIME FOR PAL (AV) [YD]	DL-PA	0~15	12	FIX	
Y-DELAY TIME FOR SECAM (AV) [YD]	DL-SA	0~15	15	FIX	
Y-DELAY TIME FOR N358 (AV) [YD]	DL-3A	0~15	12	FIX	
Y-DELAY TIME FOR N443 (AV) [YD]	DL-4A	0~15	12	FIX	
Y-DELAY TIME FOR B/W (AV) [YD]	DL-AV	0~15	12	FIX	
COLOUR OFFSET (PAL)	COL-OP	0~15	8	FIX	
COLOUR OFFSET (SECAM)	COL-OS	0~15	8	FIX	
COLOUR OFFSET (NTSC358)	COL-O3	0~15	4	FIX	
COLOUR OFFSET (NTSC443)	COL-O4	0~15	4	FIX	
SHARPNESS OFFSET (PAL)	SHP-OP	0~15	8	FIX	
SHARPNESS OFFSET (SECAM)	SHP-OS	0~15	4	FIX	

EEPROM ITEMS	OSD	DATA LENGTH	INITIAL DATA	FIX/ADJ	REMARK
SHARPNESS OFFSET (NTSC358)	SHP-O3	0~15	12	FIX	
SHARPNESS OFFSET (NTSC443)	SHP-O4	0~15	8	FIX	
BASS MIX FOR ANXXXX	BM-ON	0(DISABLE)/1(ENABLE)	0	FIX	
BASS MIX EFFECT FOR ANXXXX	BM-EFF	0~3	2	FIX	
AGC FOR ANXXXX	AGC-ON	0(DISABLE)/1(ENABLE)	1	FIX	
AGC ADJUST FOR ANXXXX	AGC-ADJ	0~3	3	FIX	
NICAM AGC	AGC-N	0(DISABLE)/1(ENABLE)	0	FIX	
NICAM AGC GAIN ADJ	GAIN-N	0~31	0	FIX	
FM OUTPUT LEVEL	FM-LV	0~30	15	FIX	
IGR OUTPUT LEVEL	IGR-LV	0~30	16	FIX	
NICAM OUTPUT LEVEL (B/G)	B/G-NLV	0~30	13	FIX	
NICAM OUTPUT LEVEL (I)	I-NLV	0~30	18	FIX	
NICAM OUTPUT LEVEL (D/K)	D/K-NLV	0~30	13	FIX	
NICAM LOWER ERROR LIMIT	LOW ERR	0~255	35	FIX	
NICAM UPPER ERROR LIMIT	UP ERR	0~255	70	FIX	
IGR STEREO R CH GAIN ADJUST	IGR-STR	0~13	6	FIX	
VERTICAL SCAN DISABLE	VSD	0(DISABLE)/1(ENABLE)	0	FIX	
BLACK STRETCH	BKS	0(DISABLE)/1(ENABLE)	1	FIX	
AUTOMATIC VOLUME LEVELING	AVL	0(DISABLE)/1(ENABLE)	1	FIX	
FAST FILTER IF-PLL	FFI	0(DISABLE)/1(ENABLE)	0	FIX	
ENABLE VERTICAL GUARD (RGB BLANKING)	EVG	0(DISABLE)/1(ENABLE)	1	FIX	ONLY BLK
EHT TRACKING MODE (HCO)	EHT	0(DISABLE)/1(ENABLE)	1	FIX	
OVERSCAN SWITCH OFF	OSO	0(DISABLE)/1(ENABLE)	0	FIX	
AUTO COLOUR LIMIT	ACL	0(DISABLE)/1(ENABLE)	0	FIX	
FORCED COLOUR LIMIT	FCO	0(DISABLE)/1(ENABLE)	0	FIX	
SOUND SYSTEM M	S-M	0(DISABLE)/1(ENABLE)	0	FIX	
SOUND SYSTEM DK	S-DK	0(DISABLE)/1(ENABLE)	1	FIX	*2
SOUND SYSTEM I	S-I	0(DISABLE)/1(ENABLE)	1	FIX	*2
SOUND SYSTEM BG	S-BG	0(DISABLE)/1(ENABLE)	1	FIX	
PLAYBACK SECAM	P-SECAM	0(DISABLE)/1(ENABLE)	1	FIX	*2
FE (RF) NTSC 3.58	F-N358	0(DISABLE)/1(ENABLE)	0	FIX	
FE (RF) NTSC 4.43	F-N443	0(DISABLE)/1(ENABLE)	1	FIX	*2
FE (RF) SECAM	F-SECAM	0(DISABLE)/1(ENABLE)	1	FIX	*2
VIDEO MUTE AT IDENT LOSS	VMI	0(DISABLE)/1(ENABLE)	1	FIX	
VIDEO MUTE AT PROGRAM/SOURCE CHANGE	VMC	0(DISABLE)/1(ENABLE)	1	FIX	
HOTEL MODE	HTL	0(DISABLE)/1(ENABLE)	0	FIX	
REDUCED FM DEMODULATOR GAIN FOR BTSC SIGNAL	BTSC	0(DISABLE)/1(ENABLE)	0	FIX	
NUMBER OF EXTERNAL AV SOURCE	AV	0 FOR1 AV/1 FOR 2AV	1	FIX	
FM WINDOW SELECTION	FMWS	0(DISABLE)/1(ENABLE)	0	FIX	
SOUND MUTE BIT 0	SM0	0(DISABLE)/1(ENABLE)	1	FIX	
SOUND MUTE BIT 1	SM1	0(DISABLE)/1(ENABLE)	0	FIX	
THAI LANGUAGE	THA	0(DISABLE)/1(ENABLE)	0	FIX	*3
ARABIC LANGUAGE	ARA	0(DISABLE)/1(ENABLE)	1	FIX	*2
MALAY LANGUAGE	MAL	0(DISABLE)/1(ENABLE)	1	FIX	*2
CHINESE LANGUAGE	CHI	0(DISABLE)/1(ENABLE)	1	FIX	*2
FRENCH LANGUAGE	FRE	0(DISABLE)/1(ENABLE)	1	FIX	*2
RUSSIAN LANGUAGE	RUS	0(DISABLE)/1(ENABLE)	1	FIX	*2
FORCED V-SYNC SLICING LEVEL	FSL	0(DISABLE)/1(ENABLE)	0	FIX	
SYNC OF OSD	HP2	0(DISABLE)/1(ENABLE)	0	FIX	
IF AGC SPEED BIT 0	AGC0	0(DISABLE)/1(ENABLE)	1	FIX	
IF AGC SPEED BIT 1	AGC1	0(DISABLE)/1(ENABLE)	0	FIX	
PHI-1 TIME CONSTANT (RF)	FOA-FE	0(DISABLE)/1(ENABLE)	0	FIX	
PHI-1 TIME CONSTANT (RF)	FOB-FE	0(DISABLE)/1(ENABLE)	0	FIX	
PHI-1 TIME CONSTANT (OFF AIR)	FOA-AV	0(DISABLE)/1(ENABLE)	1	FIX	
PHI-1 TIME CONSTANT (OFF AIR)	FOB-AV	0(DISABLE)/1(ENABLE)	1	FIX	
TELETEXT	TXT	0(DISABLE)/1(ENABLE)	0	FIX	
TELETEXT WESTERN OR EASTERN CHAR	TXT-W/E	0(WESTERN)/1(EASTERN)	0	FIX	
TELETEXT PAN-EURO LANG	TXT-EUR	0(EURO)/1(OTHER)	0	FIX	

EEPROM ITEMS	OSD	DATA LENGTH	INITIAL DATA	FIX/ADJ	REMARK
IF FREQ SELECTION	IF_38_0	0(38.9)/1(38.0)	0	FIX	
CHARGE PUMP	CP	0(FAST TUNE)/1(MODERATE TUNE)	0	FIX	
AN5890 PRESENT	AN5890	0(DISABLE)/1(ENABLE)	1	FIX	*4
AN5891 PRESENT	AN5891	0(DISABLE)/1(ENABLE)	0	FIX	*5
AN7396 PRESENT	AN7396	0(DISABLE)/1(ENABLE)	0	FIX	
NICAM DECODING ENABLED	NICAM	0(DISABLE)/1(ENABLE)	0	FIX	
IGR DECODING ENABLED	IGR	0(DISABLE)/1(ENABLE)	0	FIX	
GAME MODE ENABLED	GAME	0(DISABLE)/1(ENABLE)	0	FIX	*3
BILINGUAL	BIL	0(DISABLE)/1(ENABLE)	0	FIX	*3

NOTE(*) :

Fix data, please do not change without specific instruction.

*1 : UNLESS CUSTOMER REQUEST, OR ELSE PLEASE FIX THE ADJUSTMENT"

*2 : MANUAL CHANGE TO ' 0 '

*3 : MANUAL CHANGE TO ' 1 '

*4 : SWITCH OFF AN 5890 (MANUAL CHANGE TO ' 0 ')

*5 : SWITCH ON AN 5891 (MANUAL CHANGE TO ' 1 ')

GAME MODE DEFAULT VALUE

STORE THESE DATA IN THE EEPROM FOR GAME MODE DEFAULT VALUE

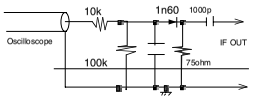
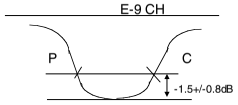
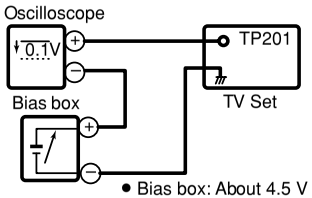
ITEM	EEPROM ADDRESS (HEX)	INITIAL DATA (HEX)	GAME DEFAULT DATA (HEX)
GAME BALANCE	251	1E	1E
GAME BASS	252	1E	2D
GAME TREBLE	253	1E	32
GAME SURROUND ON	254	00	01
GAME SURROUND LEVEL	255	1E	0A
GAME SPATIALIZER ON	256	00	00
GAME SPATIALIZER LEVEL	257	1E	1E
GAME CONTRAST	259	3C	28
GAME COLOUR	25A	1E	28
GAME BRIGHTNESS	25B	1E	1E
GAME TINT	25C	1E	1E
GAME SHARPNESS	25D	1E	32
GAME WHITE TEMP	25E	00	01

SHIPPING SETTING & CHECKING

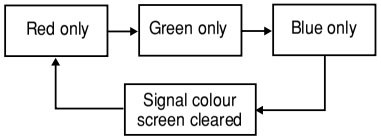
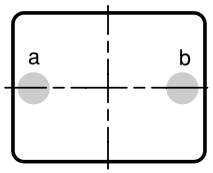
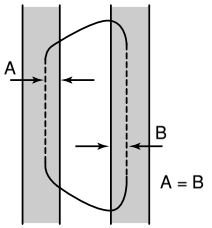
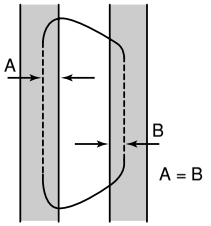
(1) The following default data has been factory-set for the E²PROM (BY PRESS FACTORY SETTING 9 KEY).

ITEMS	DATA SETTING
LAST PROGRAM/CHANNEL	1
FLASHBACK PROGARM/CH	1
DIGIT	2
C-SYSTEM	AUTO
S-SYSTEM	B/G
SKIP	OFF
AFC	ON
VOLUME	1
CONTRAST	60 (MAX)
COLOUR	0 (CENTER)
BRIGHTNESS	0 (CENTER)
TINT	0 (CENTER)
SHARPNESS	0 (CENTER)
WHITE TEMP	STANDARD
REMINDER TIMER	In-active, "--:--"
ON TIMER	In-active, "--:--"
OFF TIMER	In-active, "--:--"
LAST POWER	POWER-ON
LANGUAGE	THAI
BLUE BACK MUTE	ON
HOTEL MODE	OFF
0 CHANNEL SKIP	ON
LAST TV/AV	TV
BASS/TRE/BAL	CENT
SURROUND	OFF
SURROUND LEVEL	CENT

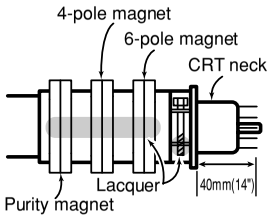
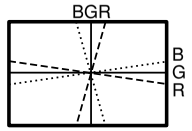
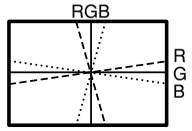
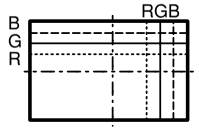
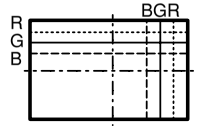
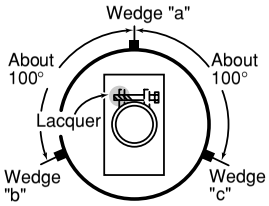
PIF ADJUSTMENT

No.	Adjusting point	Adjusting conditions/procedure	Waveform or others
1	**Tuner IFT (PRESET)**	1. Get the tuner ready to receive the CH. E - 9 signal, but with no signal input. Adjust the PLL data. 2. Connect the sweep generator's output cable to the tuner antenna. (RF SWEEP) 3. Adjust the sweep generator's to 80dBμV 4. Connect the response lead (use LOW IMPEDANCE probe with wave detector ; see Fig.1) to the tuner's IF output terminal. (This terminal must have the probe alone connected). 5. Set the RF AGC to 0 - 6 V with no saturation with the waveform. 6. Adjust the tuner IF coil to obtain the waveform as shown in Fig. 2. Note: Be sure to keep the tuner cover in position during this adjustment.	 Fig.1  Fig.2
2	**RF-AGC TAKE OVER POINT ADJUSTMENT (I²C BUS CONTROL)**	1. Receive "PAL COLOUR BAR" signal. Signal Strength: 57 ± 1 dBμV (75 ohm open) 2. Connect the oscilloscope to TP201 (Tuner's AGC Terminal) as shown in Fig. 3.  ● Bias box: About 4.5 V Fig. 3 3. Call "AGC" mode in service mode. Adjust the "AGC" bus data to get the maximum voltage at TP201. Reduce 1 data from the maximum voltage. 4. Change the antenna input signal to 63~67dBμV, and make sure there is no noise. 5. Turn up the input signal to 90~95 dBμV to be sure that there is no cross modulation beat.	**Note: For the 50 ohm signal strength gauge, when not using 50/75 impedance adapter, signal strength is 52±1dBμV(75 ohm open), instead of 57±1dBμV (75 ohm open).** **Precaution: The loss of using impedance adapter.**

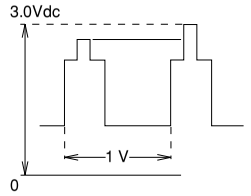
PURITY ADJUSTMENT

No.	Adjusting point	Adjusting conditions/procedure	Waveform or others
1	**PURITY ADJUSTMENT**	1. Receive the GREEN-ONLY signal. Adjust the beam current to over 500 μA 2. Degauss the CRT. Maintain the purity magnet at the zero magnetic field and keep the static convergence roughly adjusted. 3. Observe the points a, b, as shown in Fig. 4-1 through the microscope. Adjust the landings to the A rank requirements. 4. Orient the raster rotation to 0 eastward. 5. Tighten up the deflection coil screws. Tightening torque: 108 N ± 20 N (11 kgf ± 2 kgf) 6. Make sure the CRT corners landing meet the A rank requirements. If not, stick the magnet sheet to correct it. **Note: This adjustment must be done after warming up the unit for 30 minutes or longer with a beam current over 500 μA.** * For the following colours press R/C RGB key to change. 	 Fig. 4-1  Fig. 4-2 Rank "A" (On the right of the CRT)  Fig. 4-3 Rank "A" (On the left of the CRT) * Press R/C RGB key for 1 second in NORMAL MODE, the colour will change to RGB mono colour mode.

CONVERGENCE ADJUSTMENT

No.	Adjusting point	Adjusting conditions/procedure	Waveform or others
1	**CONVERGENCE ADJUSTMENT (To be done after the purity adjustment.)**	1. Receive the "Crosshatch Pattern" signal. 2. Using the remote controller, call NORMAL mode. **STATIC CONVERGENCE** 1. Turn the 4-pole magnet to a proper opening angle in order to superpose the blue and red colours. 2. Turn the 6-pole magnet to a proper opening angle in order to superpose the green colour over the blue and red colours. **DYNAMIC CONVERGENCE** 1. Adjust the convergence on the fringes of the screen in the following steps. a) Fig. 5-1: Drive the wedge at point "a" and swing the deflection coil upward. b) Fig. 5-2: Drive the wedge at points "b" and "c" and swing the deflection coil downward. c) Fig. 5-3: Drive the "c" wedge deeper and swing the deflection coil rightward. d) Fig. 5-4: Drive the "b" wedge deeper and swing the deflection coil leftward. 2. Fix all the wedges on the CRT and apply glass tape over them. 3. Apply lacquer to the deflection yoke lock screw, magnet unit (purity, 4-pole, 6-pole magnets) and magnet unit lock screw. Finally received the Red-only and Blue-only signals to make sure there is no other colours on the screen. 	 Fig. 5-1  Fig. 5-2  Fig. 5-3  Fig. 5-4 

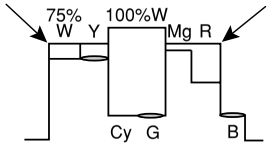
CUT-OFF, BACKGROUND, SUB-CONTRAST ADJUSTMENT

No.	Adjusting point	Adjusting conditions/procedure	Waveform or others
1	**CRT CUT-OFF ADJUSTMENT (I²C BUS CONTROL)**	1. Switch TV to AV mode, BLUE BACK OFF, with NO VIDEO signal. 2. Press R/C to set Picture Normal condition. 3. Connect the oscilloscope to Red OUT from IC801.(TP851) Range : 1 V/Div (DC) Sweep : 5 msec/Div 4. Adjust SCREEN VR ,so that the tip of signal reach 3.0 Vdc + 0.1 Vdc.	
2	**SUB-BRIGHTNESS ADJUSTMENT (I²C BUS CONTROL)**	1. Call " SUB-BRI" in service mode. (Receive Crosshatch pattern with 5 black level windows) 2. Adjust the " SUB BRIGHT " bus data in order that the line 1 and 2 have the same darkness, wherelse line 3 is slightly brighter than line 1 and 2, line 4 is slightly brighter than line 3 and finally line 5 is brighter than line 4.	 1 and 2 are in the same black level.
3	**WHITE BALANCE SERVICE MODE ADJUSTMENT (I²C BUS CONTROL)**	1. Receive the "WHITE" pattern with BURST signal. 2. Press R/C to set Picture NORMAL condition. 3. Connect the DC miliammeter between the TP 602 (-) TP 603 (+). 4. Check Beam current should be around 800μA. 5. Set it to service mode and adjust the DRI-GS and DRI-BS data to have a colour temperature of 12,300 °K at HIGH BRIGHT CONDITION. * Note. 6. Adjust "CUT-R" & "CUT-G" to get 12,300 °K at LOW BRIGHT CONDITION. Then go back HIGH BRIGHT CONDITION to check colour temperature. If out of of range, back to 1. **Note: This adjustment must be done after warming up the unit for 30 minutes or longer with a beam current over 500μA.** * Adjust DRI-GC/GW, DRI-BC/BW as following data after finishing DRI-GS and DRI-BS. DRI-GC/GW DATA = "DRI-GS" - 7 DATA DRI-RC = 25; DRI-BC = DRI-BS; DRI-RW = 32 DRI-BW DATA = "DRI-BS " -7 DATA	Refer to Page 5 / 20 FACTORY ADJ. SPEC. # 12300 °K X : 0.272 High adj spec 1.5 ins spec 1.6 Y : 0.275 Low adj spec 5.0 ins spec 30.0 (MINOLTA COLOUR ANALYZER CA-100) *** NOTE: Above DATA can be UP/ DOWN by volume key.** LOW HIGH 14" 10cd/m2 200cd/m2
4	**MAXIMUM BEAM CHECK**	1. Receive the "Monoscope Pattern" signal. 2. Press R/C to set Picture NORMAL condition. 3. Connect the DC miliammeter between TP603 (+) and TP602 (–). (Full Scale: 3 mA Range) 4. Beam current must be within 800 ± 100 μA.	

HORIZONTAL, VERTICAL DEFLECTION LOOP AND FOCUS ADJUSTMENT

No.	Adjusting point	Adjusting procedure/conditions	Waveform or others
1	**V-SLOPE (I²C BUS CONTROL)**	1. Receive PAL 50Hz Monoscope Pattern Signal. 2. Call the "V-LIN" mode. 3. Increase or decrease "V-LIN" by Volume key till the horizontal line in the center of monoscope is just at the position where the blanking starts.	
2	**V-SHIFT (I²C BUS CONTROL)**	1. Call the "V-CENT" mode. 2. Increase or decrease "V-CENT" by Volume key till the picture is centered.	
3	**V - AMP (I²C BUS CONTROL)**	1. Call the "V-AMP" mode. 2. Increase or decrease "V - AMP" by Volume key to set overscan of 8.5% typical. Adjustment Spec 8.5% range +1% -0%.	
4	**S-CORRECTION (I²C BUS CONTROL)**	**FIXED DATA, NO NEED TO ADJUST.**	
5	**H - SHIFT (50) (H-CENTER) (I²C BUS CONTROL)**	1. Call the "H-CENT" mode. 2. Increase or decrease "H-CENT" by Volume key to center the picture horizontal.	
1	**FOCUS**	1. Receive the "Monoscope Pattern" signal. 2. Press R/C to set Picture NORMAL condition. 3. Adjust the focus control to get the best focusing.	

PAL CHROMA ADJUSTMENT

No.	Adjusting point	Adjusting conditions/procedure	Waveform or others
1	**SUB COLOUR (I²C BUS CONTROL)**	1. Receive the "PAL Colour Bar" signal. 2. Press R/C to set Picture Normal condition. 3. Connect the oscilloscope to Red cathode(TP851). Range : 1 V/Div. (AC) (Using 10:1 Probe) Sweep Time : 10 µsec/Div. 4. Using the R/C call "SUB COL" in SERVICE mode. Adjust SUB COLOUR bus data, so that the 75% White & Red portions of PAL Colour Bar be at the same level shown as **Fig. 8**. 5. Clear the SERVICE mode.	 **Fig. 8**

NTSC CHROMA ADJUSTMENT

No.	Adjusting point	Adjusting conditions/procedure	Waveform or others
1	**SUB-TINT (I²C BUS CONTROL)**	1. Receive the "NTSC3.58 Colour Bar" signal thru AV in. 2. Connect the oscilloscope to TP853 (P882 pin 5) BLUE-OUT. • Range : 1V/Div. (AC)(Use Probe 10:1) • Sweep time : 10 µsec/Div. 3. Call the "SUB-TINT" mode in service mode. Adjust the "SUB-TINT" bus data to obtain the waveform shown as Fig. 9. 4. Clear the SERVICE mode.	(B-Y) SAME LEVEL W Y Cy G Mg R B Fig. 9

PROTECTOR OPERATION CHECKING

No.	Adjusting point	Adjusting conditions/procedure	Waveform or others
1	**BEAM PROTECTOR**	1. Receive "Monoscope Pattern" signal. 2. Set CONTRAST MAX. 3. Set BRIGHT MAX. 4. During the Collector & Emitter of Q883/5/7 short, make sure the protector ON and switch to standby mode.	* Select one of Q883/5/7 to do each short test.
2	**H, V PROTECTOR**	1. Receive "Monoscope Pattern" signal. 2. Connect output of Bias Box to D607 cathode (R606 side). 3. Set voltage of Bias Box to 18V and make sure the protector is not work. 4. Set voltage of Bias Box to 27V, and make sure the protector functions.	
3	**OTHER PROTECTORS**	1. Once finish rectified Electrolytic Capacitor short testing in +B line, check all possible damaged components on +B line. (Use random selected set for inspection)	

A/V INPUT AND OUTPUT CHECKING

No.	Adjusting point	Adjusting conditions/procedure	Waveform or others
1	**VIDEO AND AUDIO OUTPUT CHECK**	1. Receive the "PAL Color Bar" signal (100% White Color Bar, Sound 400 Hz 100% Mod.) 2. Terminate the Video output with a 75 ohm impedance. Make sure the output is as specified (1.0 Vp-p ±3 dB). 3. Terminate the Audio output with a 10 k ohm impedance. Make sure the output is as specified (1.76 Vp-p ±3 dB).	
2	**VIDEO AND AUDIO INPUT CHECK**	1. Using the TV/VIDEO key on the remote controller, make sure that the modes change in order of TV, AV1, AV2, GAME & TV again and the video & audio output are according to the input terminal for each mode.	

FUNCTION OPERATION CHECKING (VIDEO & AUDIO)

No.	Adjusting point	Adjusting conditions/procedure	Waveform or others
1	**CONTRAST Key**	1. Receive "Monoscope Pattern" signal. 2. Set PICTURE MENU to select CONTRAST. 3. Press Volume Up/Down key to check whether the CONTRAST effect is OK or not.	
2	**COLOUR Key**	1. Receive "Color Bar" signal. 2. Set PICTURE MENU to select COLOUR. 3. Press Volume Up/Down key to check whether the COLOUR effect is OK or not.	
3	**BRIGHTNESS Key**	1. Receive "Monoscope Pattern" signal. 2. Set PICTURE MENU to select BRIGHTNESS. 3. Press Volume Up/Down key to check whether the BRIGHTNESS effect is OK or not.	
4	**TINT Key**	1. Receive the "NTSC Colour Bar" signal thru AV in. 2. Set PICTURE MENU to select TINT. 3. Press Volume Up/Down key to check TINT, UP for GREEN direction and DOWN for PURPLE direction whether is OK or not.	
5	**SHARPNESS Key**	1. Receive "Monoscope Pattern" signal. 2. Set PICTURE MENU to select SHARPNESS. 3. Press Volume Up/Down key to check whether the SHARPNESS effect is OK or not.	
6	**CH DISPLAY COLOUR**	1. All Ch (1~99) will have an OSD display of the channel number in green colour under AFT ON condition.	
7	**NORMAL Key**	1. Once in PICTURE/SOUND MENU, and the NORMAL key is pressed, all the settings will be present to normal setting. (Normal setting value for every mode). CONTRAST : MAX COLOUR : CENTER BRIGHTNESS : CENTER TINT : CENTER SHARPNESS : CENTER WHITE TEMP : STANDARD TREBLE : CENTER BASS : CENTER SURROUND : OFF SURROUND LEVEL : CENTER BALANCE : CENTER	
8	**WHITE TEMP**	1. Receive "Monoscope Pattern" signal. 2. Set PICTURE MENU to select WHITE TEMP. 3. Press Volume Up/Down key to check WHITE TEMP Option, STANDARD: NORMAL SETTING, WARM for more REDDISH direction changing, COOL for more BLUISH direction changing.	

FUNCTION OPERATION CHECKING (VIDEO & AUDIO)

(Continued)

No.	Adjusting point	Adjusting conditions/procedure	Waveform or others
9	**COLOUR SYSTEM**	1. Receive the "PAL COLOUR BAR" signal, press the COLOUR SYSTEM key to select modes except PAL, check the COLOUR is not working properly. Then, select the "PAL" mode. Check again its colour so that it is working properly. 2. Receive "NTSC 4.43/3.58 COLOUR BAR" signal thru AV, select COLOUR SYSTEM key to select modes except N4.43/3.58, check the COLOUR is not working properly. Then, select the "NTSC 4.43/3.58" mode. Check again its colour so that it is working properly.	
10	**SOUND SYSTEM**	1. Receive "PAL-B/G" signal, and check the sound output is working properly or not.	
11	**NOISE MUTE CHECKING**	1. Receive "PAL COLOUR BAR" signal. 2. Turn up the volume control to maximum, make sure the sound is heard from the speakers. Then put the unit in no signal state. 3. Check the sound mute is effective. 4. Finally turn sound level of CTV to minimum.	
12	**OSD LANGUAGE QUANTITY CHECK**	Check OSD LANGUAGE quantity and type.	
13	**SOUND CONTROL (BASS/TRE/BAL)**	1. Receive "Monoscope Pattern" signal. 2. Set SOUND MENU to select BASS/TRE/BAL. 3. Select each item, and press Volume Up/Down Key to check the sound effect.	
14	**SURROUND FUNCTION CHECKING**	1. Receive STEREO Music signal thru AV. 2. Press SURROUND Key to select following mode. SURROUND OFF ↓ SURROUND 1 (Check SURROUND sound effect) ↓ Check the level of SURROUND 1 effect by increasing and decreasing the level control. 3. Receive MONO Music signal and press SURROUND Key to select following mode. SURROUND 2 (Check MONO sound effect)	
15	**GAME MODE CHECKING**	1. In stand by mode, once GAME key is pressed, TV set is automatically power on and switch to GAME mode.	
16	**NORMAL KEY IN GAME MODE**	In GAME mode, once NORMAL key is pressed, all the settings will be present to normal GAME mode setting. CONTRAST : + 40 TREBLE : + 20 COLOUR : + 10 BASS : + 15 BRIGHTNESS : 0 (CENTER) SURROUND : ON I SHARPNESS : + 20 SURROUND LEVEL : - 20 WHITE TEMP : BLUE (BLUISH) BALANCE : 0 (CENTER)	

HEADPHONE JACK CHECKING

No.	Adjusting point	Adjusting conditions/procedure	Waveform or others
1	**HEADPHONE OUTPUT CHECKING**	1. Receive PAL COLOUR BAR with SOUND 400Hz, 100% MODULATION (.±50kHz Dev). 2. Maximum volume, and check the headphone output with 400Hz sound and no sound out from speaker.	

BILINGUAL CHECKING

No.	Adjusting point	Adjusting conditions/procedure	Waveform or others
1	**BILINGUAL FUNCTION CHECKING**	1. Received bilingual channel. 2. Press R/C "MPX" button, and the sound will change from SOUND 1 to SOUND 2.	

MEMORY MAP

ADDRESS	DATA								MICON	E²PROM	E²PROM	CHASSIS		CTV FINAL		LAST INITIAL	REMARK
(HEX)	D7	D6	D5	D4	D3	D2	D1	D0	DEFAULT	RANGE	WRITE(CPU)	CHECK DATA	CHECK TYPE	CHECK DATA	CHECK TYPE	SETTING DATA	
00	PASS WORD								55	00-FF							
01	PASS WORD								41	00-FF							
02	PASS WORD								53	00-FF							
03	PASS WORD								54	00-FF							
04																	
05																	
06	AGC TAKE-OVER								0E	00-3F							
07	V-SLOPE								20	00-3F							
08	V-AMPLITUDE								20	00-3F							
09	V-CENTER								20	00-3F							
0A	H-CENTER								20	00-3F							
0B	H-SIZE								20	00-3F							
0C	EW-PARALLELOGRAM								20	00-3F							
0D	EW-PARABOLA/WIDTH								20	00-3F							
0E	EW-UPPER CORNER								20	00-3F							
0F	EW-LOWER CORNER								20	00-3F							
10	EW-TRAPEZIUM								20	00-3F							
11	HORIZONTAL-BOW								20	00-3F							
12	S-CORRECTION								00	00-3F							
13																	
14																	
15																	
16	DRIVE-R (STANDARD)								20	00-3F							
17	DRIVE-G (STANDARD)								20	00-3F							
18	DRIVE-B (STANDARD)								20	00-3F							
19	DRIVE-R (WARM)								20	00-3F							
1A	DRIVE-G (WARM)								20	00-3F							
1B	DRIVE-B (WARM)								20	00-3F							
1C	DRIVE-R (COOL)								19	00-3F							
1D	DRIVE-G (COOL)								20	00-3F							
1E	DRIVE-B (COOL)								20	00-3F							
1F																	
20																	
21																	
22	SUB-VOLUME								3C	00-3C							
23	SUB-CONTRAST								3F	00-3F							
24	SUB-COLOUR								20	00-3F							
25	SUB-BRIGHTNESS								20	00-3F							
26	SUB-TINT								20	00-3F							
27	SUB-SHARPNESS								20	00-3F							
28	HTL-VOLUME								1E	00-3C							
29	HTL-PROGRAM NUMBER								FF	00-FF							
2A																	
2B																	
2C	BLUE BACK CONTRAST								0A	00-0F							
2D	OSD-REFERENCE								0F	00-0F							
2E	CUTOFF LEVEL -OFFSET R								08	00-0F							
2F	CUTOFF LEVEL -OFFSET G								08	00-0F							
30	CATHODE DRIVE LEVEL								00	00-0F							
31	Y-DELAY (TV PAL)								0C	00-0F							
32	Y-DELAY (TV SECAM)								0F	00-0F							
33	Y-DELAY (TV N358)								0C	00-0F							
34	Y-DELAY (TV N443)								0C	00-0F							
35	Y-DELAY (TV BW)								0C	00-0F							
36	Y-DELAY (AV PAL)								0C	00-0F							
37	Y-DELAY (AV SECAM)								0F	00-0F							
38	Y-DELAY (AV N358)								0C	00-0F							
39	Y-DELAY (AV N443)								0C	00-0F							
3A	Y-DELAY (AV BW)								0C	00-0F							
3B	COLOUR-OFFSET (PAL)								08	00-0F							
3C	COLOUR-OFFSET (SECAM)								08	00-0F							
3D	COLOUR-OFFSET (N358)								04	00-0F							
3E	COLOUR-OFFSET (N443)								04	00-0F							
3F	SHARPNESS-OFFSET (PAL)								08	00-0F							
MODEL									MODEL								
LETTER NO.									LETTER NO.								

ADDRESS (HEX)	DATA D7	D6	D5	D4	D3	D2	D1	D0	MICON DEFAULT	E²PROM RANGE	E²PROM WRITE(CPU)	CHASSIS CHECK DATA	CHASSIS CHECK TYPE	CTV FINAL CHECK DATA	CTV FINAL CHECK TYPE	LAST INITIAL SETTING DATA	REMARK
40	SHARPNESS-OFFSET (SECAM)								04	00-0F							
41	SHARPNESS-OFFSET (N358)								0C	00-0F							
42	SHARPNESS-OFFSET (N443)								08	00-0F							
43																	
44																	
45																	
46								BM-ON	00	00-01							
47							BM-EFFECT		02	00-03							
48								AGC-ON	01	00-01							
49							BM-EFFECT		03	00-03							
4A																	
4B																	
4C								AGC-N	00	00-01							
4D	GAIN-N								00	00-1F							
4E	FM OUTPUT LEVEL								0F	00-1E							
4F	IGR OUTPUT LEVEL								10	00-1E							
50	NICAM OUTPUT LEVEL (B/G)								0D	00-1E							
51	NICAM OUTPUT LEVEL (I)								12	00-1E							
52	NICAM OUTPUT LEVEL (D/K)								0D	00-1E							
53	NICAM LOWER ERROR LIMIT								23	00-FF							
54	NICAM UPPER ERROR LIMIT								46	00-FF							
55	IGR STEREO R CH GAIN ADJ.								06	00-0F							
56																	
57																	
58	OP_FCO	OP_ACL	OP_OSO	OP_EHT	OP_EVG	OP_FFI	OP_AVL	OP_BKS	1B	00-FF							
59	OP_FSECAM	OP_FN443	OP_F358	OP_PSECAM	OP_S_BG	OP_S_I	OP_S_DK	OP_S_M	DE	00-FF							
5A	OP_SM1	OP_SM0	OP_FMWS	OP_AV	OP_BTSC	OP_HTL	OP_VMC	OP_VMI	53	00-FF							
5B	OP_HP2	OP_FSL	OP_RUS	OP_FRE	OP_CHI	OP_MAL	OP_ARA	OP_THA	3E	00-FF							
5C	OP_TXT_WE	OP_TXT	OP_FOB_AV	OP_FOA_AV	OP_FOB_FE	OP_FOA-FE	OP_AGC1	OP_AGC0	31	00-FF							
5D	OP_IGR	OP_NICAM	OP_AN7396	OP_AN5891	OP_AN5890	OP_CP	OP_IF_38.0	OP_TXT_EU	08	00-FF							
5E							OP_BIL	OP_GAME	00	00-02							
5F																	
60	LAST VOLUME								01	00-3C							
61	LAST BALANCE								1E	00-3C							
62	LAST BASS								1E	00-3C							
63	LAST TREBLE								1E	00-3C							
64							LAST SURR ON/OFF		00	00-02							
65	LAST SURROUND LEVEL								1E	00-3C							
66							LAST SPAT ON/OFF		00	00-02							
67	LAST SPATIALIZER LEVEL								1E	00-3C							
68																	
69	LAST CONTRAST								3C	00-3C							
6A	LAST COLOUR								1E	00-3C							
6B	LAST BRIGHTNESS								1E	00-3C							
6C	LAST TINT								1E	00-3C							
6D	LAST SHARPNESS								1E	00-3C							
6E								LAST WHITE_TEMP	00	00-02							
6F																	
70	LAST BALANCE-G								1E	00-3C							
71	LAST BASS-G								1E	00-3C							
72	LAST TREBLE-G								1E	00-3C							
73							LAST SURR ON/OFF-G		00	00-02							
74	LAST SURROUND LEVEL-G								1E	00-3C							
75							LAST SPAT ON/OFF-G		00	00-02							
76	LAST SPATIALIZER LEVEL-G								1E	00-3C							
77																	
78	LAST CONTRAST-G								3C	00-3C							
79	LAST COLOUR-G								1E	00-3C							
7A	LAST BRIGHTNESS-G								1E	00-3C							
7B	LAST TINT-G								1E	00-3C							
7C	LAST SHARPNESS-G								1E	00-3C							
7D							LAST WHITE_TEMP-G		00	00-02							
7E																	
7F	LAST PROGRAM/SOURCE								01	00-66							
MODEL									MODEL								
LETTER NO.									LETTER NO.								

ADDRESS (HEX)	DATA D7	D6	D5	D4	D3	D2	D1	D0	MICON DEFAULT	E²PROM RANGE	E²PROM WRITE(CPU)	CHASSIS CHECK DATA	CHASSIS CHECK TYPE	CTV FINAL CHECK DATA	CTV FINAL CHECK TYPE	LAST INITIAL SETTING DATA	REMARK
80	FAVOURITE PROGRAM RED								0A	00-FF							
81	FAVOURITE PROGRAM GREEN								14	00-FF							
82	FAVOURITE PROGRAM YELLOW								1E	00-FF							
83	FAVOURITE PROGRAM CYAN								28	00-FF							
84								POWER									
85								B_BACK									
86								POWER	01	00-01							
87								B_BACK	00	00-01							
88	LANGUAGE								00	00-06							
89	DIGIT								80	00-80							
8A																	
8B																	
8C	REMINDER TIMER								00	00-4D							
8D	OFF TIMER								00	00-4D							
8E	ON TIMER								00	00-4D							
8F	ON TIMER VOLUME								FF	00-FF							
90								TMR_FLAG	00	00-01							
91																	
92																	
93	SKIP 0	SKIP 1	SKIP 2	SKIP 3	SKIP 4	SKIP 5	SKIP 6	SKIP 7	80	00-FF							
94	SKIP 8	SKIP 9	SKIP 10	SKIP 11	SKIP 12	SKIP 13	SKIP 14	SKIP 15	00	00-FF							
95	SKIP 16	SKIP 17	SKIP 18	SKIP 19	SKIP 20	SKIP 21	SKIP 22	SKIP 23	00	00-FF							
96	SKIP 24	SKIP 25	SKIP 26	SKIP 27	SKIP 28	SKIP 29	SKIP 30	SKIP 31	00	00-FF							
97	SKIP 32	SKIP 33	SKIP 34	SKIP 35	SKIP 36	SKIP 37	SKIP 38	SKIP 39	00	00-FF							
98	SKIP 40	SKIP 41	SKIP 42	SKIP 43	SKIP 44	SKIP 45	SKIP 46	SKIP 47	00	00-FF							
99	SKIP 48	SKIP 49	SKIP 50	SKIP 51	SKIP 52	SKIP 53	SKIP 54	SKIP 55	00	00-FF							
9A	SKIP 56	SKIP 57	SKIP 58	SKIP 59	SKIP 60	SKIP 61	SKIP 62	SKIP 63	00	00-FF							
9B	SKIP 64	SKIP 65	SKIP 66	SKIP 67	SKIP 68	SKIP 69	SKIP 70	SKIP 71	00	00-FF							
9C	SKIP 72	SKIP 73	SKIP 74	SKIP 75	SKIP 76	SKIP 77	SKIP 78	SKIP 79	00	00-FF							
9D	SKIP 80	SKIP 81	SKIP 82	SKIP 83	SKIP 84	SKIP 85	SKIP 86	SKIP 87	00	00-FF							
9E	SKIP 88	SKIP 89	SKIP 90	SKIP 91	SKIP 92	SKIP 93	SKIP 94	SKIP 95	00	00-FF							
9F	SKIP 96	SKIP 97	SKIP 98	SKIP 99					00	00-FF							
A0																	
A1																	
A2	IGR 0	IGR 1	IGR 2	IGR 3	IGR 4	IGR 5	IGR 6	IGR 7	FF	00-FF							
A3	IGR 8	IGR 9	IGR 10	IGR 11	IGR 12	IGR 13	IGR 14	IGR 15	FF	00-FF							
A4	IGR 16	IGR 17	IGR 18	IGR 19	IGR 20	IGR 21	IGR 22	IGR 23	FF	00-FF							
A5	IGR 24	IGR 25	IGR 26	IGR 27	IGR 28	IGR 29	IGR 30	IGR 31	FF	00-FF							
A6	IGR 32	IGR 33	IGR 34	IGR 35	IGR 36	IGR 37	IGR 38	IGR 39	FF	00-FF							
A7	IGR 40	IGR 41	IGR 42	IGR 43	IGR 44	IGR 45	IGR 46	IGR 47	FF	00-FF							
A8	IGR 48	IGR 49	IGR 50	IGR 51	IGR 52	IGR 53	IGR 54	IGR 55	FF	00-FF							
A9	IGR 56	IGR 57	IGR 58	IGR 59	IGR 60	IGR 61	IGR 62	IGR 63	FF	00-FF							
AA	IGR 64	IGR 65	IGR 66	IGR 67	IGR 68	IGR 69	IGR 70	IGR 71	FF	00-FF							
AB	IGR 72	IGR 73	IGR 74	IGR 75	IGR 76	IGR 77	IGR 78	IGR 79	FF	00-FF							
AC	IGR 80	IGR 81	IGR 82	IGR 83	IGR 84	IGR 85	IGR 86	IGR 87	FF	00-FF							
AD	IGR 88	IGR 89	IGR 90	IGR 91	IGR 92	IGR 93	IGR 94	IGR 95	FF	00-FF							
AE	IGR 96	IGR 97	IGR 98	IGR 99					FF	00-FF							
AF																	
B0																	
B1	NICAM 0	NICAM 1	NICAM 2	NICAM 3	NICAM 4	NICAM 5	NICAM 6	NICAM 7	FF	00-FF							
B2	NICAM 8	NICAM 9	NICAM 10	NICAM 11	NICAM 12	NICAM 13	NICAM 14	NICAM 15	FF	00-FF							
B3	NICAM 16	NICAM 17	NICAM 18	NICAM 19	NICAM 20	NICAM 21	NICAM 22	NICAM 23	FF	00-FF							
B4	NICAM 24	NICAM 25	NICAM 26	NICAM 27	NICAM 28	NICAM 29	NICAM 30	NICAM 31	FF	00-FF							
B5	NICAM 32	NICAM 33	NICAM 34	NICAM 35	NICAM 36	NICAM 37	NICAM 38	NICAM 39	FF	00-FF							
B6	NICAM 40	NICAM 41	NICAM 42	NICAM 43	NICAM 44	NICAM 45	NICAM 46	NICAM 47	FF	00-FF							
B7	NICAM 48	NICAM 49	NICAM 50	NICAM 51	NICAM 52	NICAM 53	NICAM 54	NICAM 55	FF	00-FF							
B8	NICAM 56	NICAM 57	NICAM 58	NICAM 59	NICAM 60	NICAM 61	NICAM 62	NICAM 63	FF	00-FF							
B9	NICAM 64	NICAM 65	NICAM 66	NICAM 67	NICAM 68	NICAM 69	NICAM 70	NICAM 71	FF	00-FF							
BA	NICAM 72	NICAM 73	NICAM 74	NICAM 75	NICAM 76	NICAM 77	NICAM 78	NICAM 79	FF	00-FF							
BB	NICAM 80	NICAM 81	NICAM 82	NICAM 83	NICAM 84	NICAM 85	NICAM 86	NICAM 87	FF	00-FF							
BC	NICAM 88	NICAM 89	NICAM 90	NICAM 91	NICAM 92	NICAM 93	NICAM 94	NICAM 95	FF	00-FF							
BD	NICAM 96	NICAM 97	NICAM 98	NICAM 99					FF	00-FF							
BE																	
BF																	
MODEL									MODEL								
LETTER NO.									LETTER NO.								

ADDRESS	DATA								MICON	E²PROM	E²PROM	CHASSIS		CTV FINAL		LAST INITIAL	
(HEX)	D7	D6	D5	D4	D3	D2	D1	D0	DEFAULT	RANGE	WRITE(CPU)	CHECK DATA	CHECK TYPE	CHECK DATA	CHECK TYPE	SETTING DATA	REMARK
C0	IGR_ST 0	IGR_ST 1	IGR_ST 2	IGR_ST 3	IGR_ST 4	IGR_ST 5	IGR_ST 6	IGR_ST 7	FF	00-FF							
C1	IGR_ST 8	IGR_ST 9	IGR_ST 10	IGR_ST 11	IGR_ST 12	IGR_ST 13	IGR_ST 14	IGR_ST 15	FF	00-FF							
C2	IGR_ST 16	IGR_ST 17	IGR_ST 18	IGR_ST 19	IGR_ST 20	IGR_ST 21	IGR_ST 22	IGR_ST 23	FF	00-FF							
C3	IGR_ST 24	IGR_ST 25	IGR_ST 26	IGR_ST 27	IGR_ST 28	IGR_ST 29	IGR_ST 30	IGR_ST 31	FF	00-FF							
C4	IGR_ST 32	IGR_ST 33	IGR_ST 34	IGR_ST 35	IGR_ST 36	IGR_ST 37	IGR_ST 38	IGR_ST 39	FF	00-FF							
C5	IGR_ST 40	IGR_ST 41	IGR_ST 42	IGR_ST 43	IGR_ST 44	IGR_ST 45	IGR_ST 46	IGR_ST 47	FF	00-FF							
C6	IGR_ST 48	IGR_ST 49	IGR_ST 50	IGR_ST 51	IGR_ST 52	IGR_ST 53	IGR_ST 54	IGR_ST 55	FF	00-FF							
C7	IGR_ST 56	IGR_ST 57	IGR_ST 58	IGR_ST 59	IGR_ST 60	IGR_ST 61	IGR_ST 62	IGR_ST 63	FF	00-FF							
C8	IGR_ST 64	IGR_ST 65	IGR_ST 66	IGR_ST 67	IGR_ST 68	IGR_ST 69	IGR_ST 70	IGR_ST 71	FF	00-FF							
C9	IGR_ST 72	IGR_ST 73	IGR_ST 74	IGR_ST 75	IGR_ST 76	IGR_ST 77	IGR_ST 78	IGR_ST 79	FF	00-FF							
CA	IGR_ST 80	IGR_ST 81	IGR_ST 82	IGR_ST 83	IGR_ST 84	IGR_ST 85	IGR_ST 86	IGR_ST 87	FF	00-FF							
CB	IGR_ST 88	IGR_ST 89	IGR_ST 90	IGR_ST 91	IGR_ST 92	IGR_ST 93	IGR_ST 94	IGR_ST 95	FF	00-FF							
CC	IGR_ST 96	IGR_ST 97	IGR_ST 98	IGR_ST 99					FF	00-FF							
CD																	
CE																	
CF	IGR_MA 0	IGR_MA 1	IGR_MA 2	IGR_MA 3	IGR_MA 4	IGR_MA 5	IGR_MA 6	IGR_MA 7	FF	00-FF							
D0	IGR_MA 8	IGR_MA 9	IGR_MA 10	IGR_MA 11	IGR_MA 12	IGR_MA 13	IGR_MA 14	IGR_MA 15	FF	00-FF							
D1	IGR_MA16	IGR_MA 17	IGR_MA 18	IGR_MA 19	IGR_MA 20	IGR_MA 21	IGR_MA 22	IGR_MA 23	FF	00-FF							
D2	IGR_MA24	IGR_MA 25	IGR_MA 26	IGR_MA 27	IGR_MA 28	IGR_MA 29	IGR_MA 30	IGR_MA 31	FF	00-FF							
D3	IGR_MA32	IGR_MA 33	IGR_MA 34	IGR_MA 35	IGR_MA 36	IGR_MA 37	IGR_MA 38	IGR_MA 39	FF	00-FF							
D4	IGR_MA40	IGR_MA 41	IGR_MA 42	IGR_MA 43	IGR_MA 44	IGR_MA 45	IGR_MA 46	IGR_MA 47	FF	00-FF							
D5	IGR_MA48	IGR_MA 49	IGR_MA 50	IGR_MA 51	IGR_MA 52	IGR_MA 53	IGR_MA 54	IGR_MA 55	FF	00-FF							
D6	IGR_MA56	IGR_MA 57	IGR_MA 58	IGR_MA 59	IGR_MA 60	IGR_MA 61	IGR_MA 62	IGR_MA 63	FF	00-FF							
D7	IGR_MA64	IGR_MA 65	IGR_MA 66	IGR_MA 67	IGR_MA 68	IGR_MA 69	IGR_MA 70	IGR_MA 71	FF	00-FF							
D8	IGR_MA72	IGR_MA 73	IGR_MA 74	IGR_MA 75	IGR_MA 76	IGR_MA 77	IGR_MA 78	IGR_MA 79	FF	00-FF							
D9	IGR_MA80	IGR_MA 81	IGR_MA 82	IGR_MA 83	IGR_MA 84	IGR_MA 85	IGR_MA 86	IGR_MA 87	FF	00-FF							
DA	IGR_MA88	IGR_MA 89	IGR_MA 90	IGR_MA 91	IGR_MA 92	IGR_MA 93	IGR_MA 94	IGR_MA 95	FF	00-FF							
DB	IGR_MA96	IGR_MA 97	IGR_MA 98	IGR_MA 99					FF	00-FF							
DC																	
DD																	
DE	NIC_ST 0	NIC_ST 1	NIC_ST 2	NIC_ST 3	NIC_ST 4	NIC_ST 5	NIC_ST 6	NIC_ST 7	FF	00-FF							
DF	NIC_ST 8	NIC_ST 9	NIC_ST 10	NIC_ST 11	NIC_ST 12	NIC_ST 13	NIC_ST 14	NIC_ST 15	FF	00-FF							
E0	NIC_ST 16	NIC_ST 17	NIC_ST 18	NIC_ST 19	NIC_ST 20	NIC_ST 21	NIC_ST 22	NIC_ST 23	FF	00-FF							
E1	NIC_ST 24	NIC_ST 25	NIC_ST 26	NIC_ST 27	NIC_ST 28	NIC_ST 29	NIC_ST 30	NIC_ST 31	FF	00-FF							
E2	NIC_ST 32	NIC_ST 33	NIC_ST 34	NIC_ST 35	NIC_ST 36	NIC_ST 37	NIC_ST 38	NIC_ST 39	FF	00-FF							
E3	NIC_ST 40	NIC_ST 41	NIC_ST 42	NIC_ST 43	NIC_ST 44	NIC_ST 45	NIC_ST 46	NIC_ST 47	FF	00-FF							
E4	NIC_ST 48	NIC_ST 49	NIC_ST 50	NIC_ST 51	NIC_ST 52	NIC_ST 53	NIC_ST 54	NIC_ST 55	FF	00-FF							
E5	NIC_ST 56	NIC_ST 57	NIC_ST 58	NIC_ST 59	NIC_ST 60	NIC_ST 61	NIC_ST 62	NIC_ST 63	FF	00-FF							
E6	NIC_ST 64	NIC_ST 65	NIC_ST 66	NIC_ST 67	NIC_ST 68	NIC_ST 69	NIC_ST 70	NIC_ST 71	FF	00-FF							
E7	NIC_ST 72	NIC_ST 73	NIC_ST 74	NIC_ST 75	NIC_ST 76	NIC_ST 77	NIC_ST 78	NIC_ST 79	FF	00-FF							
E8	NIC_ST 80	NIC_ST 81	NIC_ST 82	NIC_ST 83	NIC_ST 84	NIC_ST 85	NIC_ST 86	NIC_ST 87	FF	00-FF							
E9	NIC_ST 88	NIC_ST 89	NIC_ST 90	NIC_ST 91	NIC_ST 92	NIC_ST 93	NIC_ST 94	NIC_ST 95	FF	00-FF							
EA	NIC_ST 96	NIC_ST 97	NIC_ST 98	NIC_ST 99					FF	00-FF							
EB																	
EC																	
ED	NIC_MA 0	NIC_MA 1	NIC_MA 2	NIC_MA 3	NIC_MA 4	NIC_MA 5	NIC_MA 6	NIC_MA 7	FF	00-FF							
EE	NIC_MA 8	NIC_MA 9	NIC_MA 10	NIC_MA 11	NIC_MA 12	NIC_MA 13	NIC_MA 14	NIC_MA 15	FF	00-FF							
EF	NIC_MA 16	NIC_MA 17	NIC_MA 18	NIC_MA 19	NIC_MA 20	NIC_MA 21	NIC_MA 22	NIC_MA 23	FF	00-FF							
F0	NIC_MA 24	NIC_MA 25	NIC_MA 26	NIC_MA 27	NIC_MA 28	NIC_MA 29	NIC_MA 30	NIC_MA 31	FF	00-FF							
F1	NIC_MA 32	NIC_MA 33	NIC_MA 34	NIC_MA 35	NIC_MA 36	NIC_MA 37	NIC_MA 38	NIC_MA 39	FF	00-FF							
F2	NIC_MA 40	NIC_MA 41	NIC_MA 42	NIC_MA 43	NIC_MA 44	NIC_MA 45	NIC_MA 46	NIC_MA 47	FF	00-FF							
F3	NIC_MA 48	NIC_MA 49	NIC_MA 50	NIC_MA 51	NIC_MA 52	NIC_MA 53	NIC_MA 54	NIC_MA 55	FF	00-FF							
F4	NIC_MA 56	NIC_MA 57	NIC_MA 58	NIC_MA 59	NIC_MA 60	NIC_MA 61	NIC_MA 62	NIC_MA 63	FF	00-FF							
F5	NIC_MA 64	NIC_MA 65	NIC_MA 66	NIC_MA 67	NIC_MA 68	NIC_MA 69	NIC_MA 70	NIC_MA 71	FF	00-FF							
F6	NIC_MA 72	NIC_MA 73	NIC_MA 74	NIC_MA 75	NIC_MA 76	NIC_MA 77	NIC_MA 78	NIC_MA 79	FF	00-FF							
F7	NIC_MA 80	NIC_MA 81	NIC_MA 82	NIC_MA 83	NIC_MA 84	NIC_MA 85	NIC_MA 86	NIC_MA 87	FF	00-FF							
F8	NIC_MA 88	NIC_MA 89	NIC_MA 90	NIC_MA 91	NIC_MA 92	NIC_MA 93	NIC_MA 94	NIC_MA 95	FF	00-FF							
F9	NIC_MA 96	NIC_MA 97	NIC_MA 98	NIC_MA 99					FF	00-FF							
FA																	
FB																	
FC	NIC_3D 0	NIC_3D 1	NIC_3D 2	NIC_3D 3	NIC_3D 4	NIC_3D 5	NIC_3D 6	NIC_3D 7	00	00-FF							
FD	NIC_3D 8	NIC_3D 9	NIC_3D 10	NIC_3D 11	NIC_3D 12	NIC_3D 13	NIC_3D 14	NIC_3D 15	00	00-FF							
FE	NIC_3D 16	NIC_3D 17	NIC_3D 18	NIC_3D 19	NIC_3D 20	NIC_3D 21	NIC_3D 22	NIC_3D 23	00	00-FF							
FF	NIC_3D 24	NIC_3D 25	NIC_3D 26	NIC_3D 27	NIC_3D 28	NIC_3D 29	NIC_3D 30	NIC_3D 31	00	00-FF							
MODEL									MODEL								
LETTER NO.									LETTER NO.								

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ADDRESS	DATA								MICON	E²PROM	E²PROM	CHASSIS		CTV FINAL		LAST INITIAL	
(HEX)	D7	D6	D5	D4	D3	D2	D1	D0	DEFAULT	RANGE	WRITE(CPU)	CHECK DATA	CHECK TYPE	CHECK DATA	CHECK TYPE	SETTING DATA	REMARK
100	NIC_3D 32	NIC_3D 33	NIC_3D 34	NIC_3D 35	NIC_3D 36	NIC_3D 37	NIC_3D 38	NIC_3D 39	00	00-FF							
101	NIC_3D 40	NIC_3D 41	NIC_3D 42	NIC_3D 43	NIC_3D 44	NIC_3D 45	NIC_3D 46	NIC_3D 47	00	00-FF							
102	NIC_3D 48	NIC_3D 49	NIC_3D 50	NIC_3D 51	NIC_3D 52	NIC_3D 53	NIC_3D 54	NIC_3D 55	00	00-FF							
103	NIC_3D 56	NIC_3D 57	NIC_3D 58	NIC_3D 59	NIC_3D 60	NIC_3D 61	NIC_3D 62	NIC_3D 63	00	00-FF							
104	NIC_3D 64	NIC_3D 65	NIC_3D 66	NIC_3D 67	NIC_3D 68	NIC_3D 69	NIC_3D 70	NIC_3D 71	00	00-FF							
105	NIC_3D 72	NIC_3D 73	NIC_3D 74	NIC_3D 75	NIC_3D 76	NIC_3D 77	NIC_3D 78	NIC_3D 79	00	00-FF							
106	NIC_3D 80	NIC_3D 81	NIC_3D 82	NIC_3D 83	NIC_3D 84	NIC_3D 85	NIC_3D 86	NIC_3D 87	00	00-FF							
107	NIC_3D 88	NIC_3D 89	NIC_3D 90	NIC_3D 91	NIC_3D 92	NIC_3D 93	NIC_3D 94	NIC_3D 95	00	00-FF							
108	NIC_3D 96	NIC_3D 97	NIC_3D 98	NIC_3D 99					00	00-FF							
109																	
10A																	
10B	NIC_MO 0	NIC_MO 1	NIC_MO 2	NIC_MO 3	NIC_MO 4	NIC_MO 5	NIC_MO 6	NIC_MO 7	FF	00-FF							
10C	NIC_MO 8	NIC_MO 9	NIC_MO 10	NIC_MO 11	NIC_MO 12	NIC_MO 13	NIC_MO 14	NIC_MO 15	FF	00-FF							
10D	NIC_MO16	NIC_MO 17	NIC_MO 18	NIC_MO 19	NIC_MO20	NIC_MO 21	NIC_MO 22	NIC_MO 23	FF	00-FF							
10E	NIC_MO24	NIC_MO 25	NIC_MO 26	NIC_MO 27	NIC_MO28	NIC_MO 29	NIC_MO 30	NIC_MO 31	FF	00-FF							
10F	NIC_MO32	NIC_MO 33	NIC_MO 34	NIC_MO 35	NIC_MO36	NIC_MO 37	NIC_MO 38	NIC_MO 39	FF	00-FF							
110	NIC_MO40	NIC_MO 41	NIC_MO 42	NIC_MO 43	NIC_MO44	NIC_MO 45	NIC_MO 46	NIC_MO 47	FF	00-FF							
111	NIC_MO48	NIC_MO 49	NIC_MO 50	NIC_MO 51	NIC_MO52	NIC_MO 53	NIC_MO 54	NIC_MO 55	FF	00-FF							
112	NIC_MO56	NIC_MO 57	NIC_MO 58	NIC_MO 59	NIC_MO60	NIC_MO 61	NIC_MO 62	NIC_MO 63	FF	00-FF							
113	NIC_MO64	NIC_MO 65	NIC_MO 66	NIC_MO 67	NIC_MO68	NIC_MO 69	NIC_MO 70	NIC_MO 71	FF	00-FF							
114	NIC_MO72	NIC_MO 73	NIC_MO 74	NIC_MO 75	NIC_MO76	NIC_MO 77	NIC_MO 78	NIC_MO 79	FF	00-FF							
115	NIC_MO80	NIC_MO 81	NIC_MO 82	NIC_MO 83	NIC_MO84	NIC_MO 85	NIC_MO 86	NIC_MO 87	FF	00-FF							
116	NIC_MO88	NIC_MO 89	NIC_MO 90	NIC_MO 91	NIC_MO92	NIC_MO 93	NIC_MO 94	NIC_MO 95	FF	00-FF							
117	NIC_MO96	NIC_MO 97	NIC_MO 98	NIC_MO 99					FF	00-FF							
118																	
119																	
11A	TUNING FREQUENCY (HIGHER PART)										S-SYS						POS 0
11B	TUNING FREQUENCY (LOWER PART)										000:BG						
11C	S-SYS			AFT		(auto)		C-SYS	10		001:I						
11D	TUNING FREQUENCY (HIGHER PART)										010:DK						POS 1
11E	TUNING FREQUENCY (LOWER PART)										011:M						
11F	S-SYS			AFT		(auto)		C-SYS	10								
120	TUNING FREQUENCY (HIGHER PART)										AFT						POS 2
121	TUNING FREQUENCY (LOWER PART)										0:OFF						
122	S-SYS			AFT		(auto)		C-SYS	10		1:ON						
123	TUNING FREQUENCY (HIGHER PART)																POS 3
124	TUNING FREQUENCY (LOWER PART)																
125	S-SYS			AFT		(auto)		C-SYS	10								
126	TUNING FREQUENCY (HIGHER PART)																POS 4
127	TUNING FREQUENCY (LOWER PART)																
128	S-SYS			AFT		(auto)		C-SYS	10								
129	TUNING FREQUENCY (HIGHER PART)																POS 5
12A	TUNING FREQUENCY (LOWER PART)																
12B	S-SYS			AFT		(auto)		C-SYS	10								
12C	TUNING FREQUENCY (HIGHER PART)																POS 6
12D	TUNING FREQUENCY (LOWER PART)																
12E	S-SYS			AFT		(auto)		C-SYS	10								
12F	TUNING FREQUENCY (HIGHER PART)																POS 7
130	TUNING FREQUENCY (LOWER PART)																
131	S-SYS			AFT		(auto)		C-SYS	10								
132	TUNING FREQUENCY (HIGHER PART)																POS 8
133	TUNING FREQUENCY (LOWER PART)																
134	S-SYS			AFT		(auto)		C-SYS	10								
135	TUNING FREQUENCY (HIGHER PART)																POS 9
136	TUNING FREQUENCY (LOWER PART)																
137	S-SYS			AFT		(auto)		C-SYS	10								
138	TUNING FREQUENCY (HIGHER PART)																POS 10
139	TUNING FREQUENCY (LOWER PART)																
13A	S-SYS			AFT		(auto)		C-SYS	10								
13B	TUNING FREQUENCY (HIGHER PART)																POS 11
13C	TUNING FREQUENCY (LOWER PART)																
13D	S-SYS			AFT		(auto)		C-SYS	10								
13E	TUNING FREQUENCY (HIGHER PART)																POS 12
13F	TUNING FREQUENCY (LOWER PART)																
MODEL									MODEL								
LETTER NO.									LETTER NO.								

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14AP1

ADDRESS (HEX)	DATA D7	D6	D5	D4	D3	D2	D1	D0	MICON DEFAULT	E²PROM RANGE	E²PROM WRITE(CPU)	CHASSIS CHECK DATA	CHASSIS CHECK TYPE	CTV FINAL CHECK DATA	CTV FINAL CHECK TYPE	LAST INITIAL SETTING DATA	REMARK
140	S-SYS		AFT	(auto)				C-SYS	10								
141	TUNING FREQUENCY (HIGHER PART)																POS 13
142	TUNING FREQUENCY (LOWER PART)																
143	S-SYS		AFT	(auto)				C-SYS	10								
144	TUNING FREQUENCY (HIGHER PART)																POS 14
145	TUNING FREQUENCY (LOWER PART)																
146	S-SYS		AFT	(auto)				C-SYS	10								
147	TUNING FREQUENCY (HIGHER PART)																POS 15
148	TUNING FREQUENCY (LOWER PART)																
149	S-SYS		AFT	(auto)				C-SYS	10								
14A	TUNING FREQUENCY (HIGHER PART)																POS 16
14B	TUNING FREQUENCY (LOWER PART)																
14C	S-SYS		AFT	(auto)				C-SYS	10								
14D	TUNING FREQUENCY (HIGHER PART)																POS 17
14E	TUNING FREQUENCY (LOWER PART)																
14F	S-SYS		AFT	(auto)				C-SYS	10								
150	TUNING FREQUENCY (HIGHER PART)																POS 18
151	TUNING FREQUENCY (LOWER PART)																
152	S-SYS		AFT	(auto)				C-SYS	10								
153	TUNING FREQUENCY (HIGHER PART)																POS 19
154	TUNING FREQUENCY (LOWER PART)																
155	S-SYS		AFT	(auto)				C-SYS	10								
156	TUNING FREQUENCY (HIGHER PART)																POS 20
157	TUNING FREQUENCY (LOWER PART)																
158	S-SYS		AFT	(auto)				C-SYS	10								
159	TUNING FREQUENCY (HIGHER PART)																POS 21
15A	TUNING FREQUENCY (LOWER PART)																
15B	S-SYS		AFT	(auto)				C-SYS	10								
15C	TUNING FREQUENCY (HIGHER PART)																POS 22
15D	TUNING FREQUENCY (LOWER PART)																
15E	S-SYS		AFT	(auto)				C-SYS	10								
15F	TUNING FREQUENCY (HIGHER PART)																POS 23
160	TUNING FREQUENCY (LOWER PART)																
161	S-SYS		AFT	(auto)				C-SYS	10								
162	TUNING FREQUENCY (HIGHER PART)																POS 24
163	TUNING FREQUENCY (LOWER PART)																
164	S-SYS		AFT	(auto)				C-SYS	10								
165	TUNING FREQUENCY (HIGHER PART)																POS 25
166	TUNING FREQUENCY (LOWER PART)																
167	S-SYS		AFT	(auto)				C-SYS	10								
168	TUNING FREQUENCY (HIGHER PART)																POS 26
169	TUNING FREQUENCY (LOWER PART)																
16A	S-SYS		AFT	(auto)				C-SYS	10								
16B	TUNING FREQUENCY (HIGHER PART)																POS 27
16C	TUNING FREQUENCY (LOWER PART)																
16D	S-SYS		AFT	(auto)				C-SYS	10								
16E	TUNING FREQUENCY (HIGHER PART)																POS 28
16F	TUNING FREQUENCY (LOWER PART)																
170	S-SYS		AFT	(auto)				C-SYS	10								
171	TUNING FREQUENCY (HIGHER PART)																POS 29
172	TUNING FREQUENCY (LOWER PART)																
173	S-SYS		AFT	(auto)				C-SYS	10								
174	TUNING FREQUENCY (HIGHER PART)																POS 30
175	TUNING FREQUENCY (LOWER PART)																
176	S-SYS		AFT	(auto)				C-SYS	10								
177	TUNING FREQUENCY (HIGHER PART)																POS 31
178	TUNING FREQUENCY (LOWER PART)																
179	S-SYS		AFT	(auto)				C-SYS	10								
17A	TUNING FREQUENCY (HIGHER PART)																POS 32
17B	TUNING FREQUENCY (LOWER PART)																
17C	S-SYS		AFT	(auto)				C-SYS	10								
17D	TUNING FREQUENCY (HIGHER PART)																POS 33
17E	TUNING FREQUENCY (LOWER PART)																
17F	S-SYS		AFT	(auto)				C-SYS	10								
MODEL									MODEL								
LETTER NO.									LETTER NO.								

ADDRESS (HEX)	DATA D7	D6	D5	D4	D3	D2	D1	D0	MICON DEFAULT	E²PROM RANGE	E²PROM WRITE(CPU)	CHASSIS CHECK DATA	CHASSIS CHECK TYPE	CTV FINAL CHECK DATA	CTV FINAL CHECK TYPE	LAST INITIAL SETTING DATA	REMARK
180	TUNING FREQUENCY (HIGHER PART)																POS 34
181	TUNING FREQUENCY (LOWER PART)																
182	S-SYS		AFT	(auto)				C-SYS	10								
183	TUNING FREQUENCY (HIGHER PART)																POS 35
184	TUNING FREQUENCY (LOWER PART)																
185	S-SYS		AFT	(auto)				C-SYS	10								
186	TUNING FREQUENCY (HIGHER PART)																POS 36
187	TUNING FREQUENCY (LOWER PART)																
188	S-SYS		AFT	(auto)				C-SYS	10								
189	TUNING FREQUENCY (HIGHER PART)																POS 37
18A	TUNING FREQUENCY (LOWER PART)																
18B	S-SYS		AFT	(auto)				C-SYS	10								
18C	TUNING FREQUENCY (HIGHER PART)																POS 38
18D	TUNING FREQUENCY (LOWER PART)																
18E	S-SYS		AFT	(auto)				C-SYS	10								
18F	TUNING FREQUENCY (HIGHER PART)																POS 39
190	TUNING FREQUENCY (LOWER PART)																
191	S-SYS		AFT	(auto)				C-SYS	10								
192	TUNING FREQUENCY (HIGHER PART)																POS 40
193	TUNING FREQUENCY (LOWER PART)																
194	S-SYS		AFT	(auto)				C-SYS	10								
195	TUNING FREQUENCY (HIGHER PART)																POS 41
196	TUNING FREQUENCY (LOWER PART)																
197	S-SYS		AFT	(auto)				C-SYS	10								
198	TUNING FREQUENCY (HIGHER PART)																POS 42
199	TUNING FREQUENCY (LOWER PART)																
19A	S-SYS		AFT	(auto)				C-SYS	10								
19B	TUNING FREQUENCY (HIGHER PART)																POS 43
19C	TUNING FREQUENCY (LOWER PART)																
19D	S-SYS		AFT	(auto)				C-SYS	10								
19E	TUNING FREQUENCY (HIGHER PART)																POS 44
19F	TUNING FREQUENCY (LOWER PART)																
1A0	S-SYS		AFT	(auto)				C-SYS	10								
1A1	TUNING FREQUENCY (HIGHER PART)																POS 45
1A2	TUNING FREQUENCY (LOWER PART)																
1A3	S-SYS		AFT	(auto)				C-SYS	10								
1A4	TUNING FREQUENCY (HIGHER PART)																POS 46
1A5	TUNING FREQUENCY (LOWER PART)																
1A6	S-SYS		AFT	(auto)				C-SYS	10								
1A7	TUNING FREQUENCY (HIGHER PART)																POS 47
1A8	TUNING FREQUENCY (LOWER PART)																
1A9	S-SYS		AFT	(auto)				C-SYS	10								
1AA	TUNING FREQUENCY (HIGHER PART)																POS 48
1AB	TUNING FREQUENCY (LOWER PART)																
1AC	S-SYS		AFT	(auto)				C-SYS	10								
1AD	TUNING FREQUENCY (HIGHER PART)																POS 49
1AE	TUNING FREQUENCY (LOWER PART)																
1AF	S-SYS		AFT	(auto)				C-SYS	10								
1B0	TUNING FREQUENCY (HIGHER PART)																POS 50
1B1	TUNING FREQUENCY (LOWER PART)																
1B2	S-SYS		AFT	(auto)				C-SYS	10								
1B3	TUNING FREQUENCY (HIGHER PART)																POS 51
1B4	TUNING FREQUENCY (LOWER PART)																
1B5	S-SYS		AFT	(auto)				C-SYS	10								
1B6	TUNING FREQUENCY (HIGHER PART)																POS 52
1B7	TUNING FREQUENCY (LOWER PART)																
1B8	S-SYS		AFT	(auto)				C-SYS	10								
1B9	TUNING FREQUENCY (HIGHER PART)																POS 53
1BA	TUNING FREQUENCY (LOWER PART)																
1BB	S-SYS		AFT	(auto)				C-SYS	10								
1BC	TUNING FREQUENCY (HIGHER PART)																POS 54
1BD	TUNING FREQUENCY (LOWER PART)																
1BE	S-SYS		AFT	(auto)				C-SYS	10								
1BF	TUNING FREQUENCY (HIGHER PART)																POS 55
MODEL									MODEL								
LETTER NO.									LETTER NO.								

ADDRESS (HEX)	DATA D7	D6	D5	D4	D3	D2	D1	D0	MICON DEFAULT	E²PROM RANGE	E²PROM WRITE(CPU)	CHASSIS CHECK DATA	CHASSIS CHECK TYPE	CTV FINAL CHECK DATA	CTV FINAL CHECK TYPE	LAST INITIAL SETTING DATA	REMARK
1C0	TUNING FREQUENCY (LOWER PART)																POS 55
1C1	S-SYS		AFT		(auto)			C-SYS	10								
1C2	TUNING FREQUENCY (HIGHER PART)																POS 56
1C3	TUNING FREQUENCY (LOWER PART)																
1C4	S-SYS		AFT		(auto)			C-SYS	10								
1C5	TUNING FREQUENCY (HIGHER PART)																POS 57
1C6	TUNING FREQUENCY (LOWER PART)																
1C7	S-SYS		AFT		(auto)			C-SYS	10								
1C8	TUNING FREQUENCY (HIGHER PART)																POS 58
1C9	TUNING FREQUENCY (LOWER PART)																
1CA	S-SYS		AFT		(auto)			C-SYS	10								
1CB	TUNING FREQUENCY (HIGHER PART)																POS 59
1CC	TUNING FREQUENCY (LOWER PART)																
1CD	S-SYS		AFT		(auto)			C-SYS	10								
1CE	TUNING FREQUENCY (HIGHER PART)																POS 60
1CF	TUNING FREQUENCY (LOWER PART)																
1D0	S-SYS		AFT		(auto)			C-SYS	10								
1D1	TUNING FREQUENCY (HIGHER PART)																POS 61
1D2	TUNING FREQUENCY (LOWER PART)																
1D3	S-SYS		AFT		(auto)			C-SYS	10								
1D4	TUNING FREQUENCY (HIGHER PART)																POS 62
1D5	TUNING FREQUENCY (LOWER PART)																
1D6	S-SYS		AFT		(auto)			C-SYS	10								
1D7	TUNING FREQUENCY (HIGHER PART)																POS 63
1D8	TUNING FREQUENCY (LOWER PART)																
1D9	S-SYS		AFT		(auto)			C-SYS	10								
1DA	TUNING FREQUENCY (HIGHER PART)																POS 64
1DB	TUNING FREQUENCY (LOWER PART)																
1DC	S-SYS		AFT		(auto)			C-SYS	10								
1DD	TUNING FREQUENCY (HIGHER PART)																POS 65
1DE	TUNING FREQUENCY (LOWER PART)																
1DF	S-SYS		AFT		(auto)			C-SYS	10								
1E0	TUNING FREQUENCY (HIGHER PART)																POS 66
1E1	TUNING FREQUENCY (LOWER PART)																
1E2	S-SYS		AFT		(auto)			C-SYS	10								
1E3	TUNING FREQUENCY (HIGHER PART)																POS 67
1E4	TUNING FREQUENCY (LOWER PART)																
1E5	S-SYS		AFT		(auto)			C-SYS	10								
1E6	TUNING FREQUENCY (HIGHER PART)																POS 68
1E7	TUNING FREQUENCY (LOWER PART)																
1E8	S-SYS		AFT		(auto)			C-SYS	10								
1E9	TUNING FREQUENCY (HIGHER PART)																POS 69
1EA	TUNING FREQUENCY (LOWER PART)																
1EB	S-SYS		AFT		(auto)			C-SYS	10								
1EC	TUNING FREQUENCY (HIGHER PART)																POS 70
1ED	TUNING FREQUENCY (LOWER PART)																
1EE	S-SYS		AFT		(auto)			C-SYS	10								
1EF	TUNING FREQUENCY (HIGHER PART)																POS 71
1F0	TUNING FREQUENCY (LOWER PART)																
1F1	S-SYS		AFT		(auto)			C-SYS	10								
1F2	TUNING FREQUENCY (HIGHER PART)																POS 72
1F3	TUNING FREQUENCY (LOWER PART)																
1F4	S-SYS		AFT		(auto)			C-SYS	10								
1F5	TUNING FREQUENCY (HIGHER PART)																POS 73
1F6	TUNING FREQUENCY (LOWER PART)																
1F7	S-SYS		AFT		(auto)			C-SYS	10								
1F8	TUNING FREQUENCY (HIGHER PART)																POS 74
1F9	TUNING FREQUENCY (LOWER PART)																
1FA	S-SYS		AFT		(auto)			C-SYS	10								
1FB	TUNING FREQUENCY (HIGHER PART)																POS 75
1FC	TUNING FREQUENCY (LOWER PART)																
1FD	S-SYS		AFT		(auto)			C-SYS	10								
1FE	TUNING FREQUENCY (HIGHER PART)																POS 76
1FF	TUNING FREQUENCY (LOWER PART)																
MODEL									MODEL								
LETTER NO.									LETTER NO.								

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ADDRESS (HEX)	DATA D7	D6	D5	D4	D3	D2	D1	D0	MICON DEFAULT	E²PROM RANGE	E²PROM WRITE(CPU)	CHASSIS CHECK DATA	CHASSIS CHECK TYPE	CTV FINAL CHECK DATA	CTV FINAL CHECK TYPE	LAST INITIAL SETTING DATA	REMARK
200	S-SYS		AFT		(auto)			C-SYS	10								
201	TUNING FREQUENCY (HIGHER PART)																POS 77
202	TUNING FREQUENCY (LOWER PART)																
203	S-SYS		AFT		(auto)			C-SYS	10								
204	TUNING FREQUENCY (HIGHER PART)																POS 78
205	TUNING FREQUENCY (LOWER PART)																
206	S-SYS		AFT		(auto)			C-SYS	10								
207	TUNING FREQUENCY (HIGHER PART)																POS 79
208	TUNING FREQUENCY (LOWER PART)																
209	S-SYS		AFT		(auto)			C-SYS	10								
20A	TUNING FREQUENCY (HIGHER PART)																POS 80
20B	TUNING FREQUENCY (LOWER PART)																
20C	S-SYS		AFT		(auto)			C-SYS	10								
20D	TUNING FREQUENCY (HIGHER PART)																POS 81
20E	TUNING FREQUENCY (LOWER PART)																
20F	S-SYS		AFT		(auto)			C-SYS	10								
210	TUNING FREQUENCY (HIGHER PART)																POS 82
211	TUNING FREQUENCY (LOWER PART)																
212	S-SYS		AFT		(auto)			C-SYS	10								
213	TUNING FREQUENCY (HIGHER PART)																POS 83
214	TUNING FREQUENCY (LOWER PART)																
215	S-SYS		AFT		(auto)			C-SYS	10								
216	TUNING FREQUENCY (HIGHER PART)																POS 84
217	TUNING FREQUENCY (LOWER PART)																
218	S-SYS		AFT		(auto)			C-SYS	10								
219	TUNING FREQUENCY (HIGHER PART)																POS 85
21A	TUNING FREQUENCY (LOWER PART)																
21B	S-SYS		AFT		(auto)			C-SYS	10								
21C	TUNING FREQUENCY (HIGHER PART)																POS 86
21D	TUNING FREQUENCY (LOWER PART)																
21E	S-SYS		AFT		(auto)			C-SYS	10								
21F	TUNING FREQUENCY (HIGHER PART)																POS 87
220	TUNING FREQUENCY (LOWER PART)																
221	S-SYS		AFT		(auto)			C-SYS	10								
222	TUNING FREQUENCY (HIGHER PART)																POS 88
223	TUNING FREQUENCY (LOWER PART)																
224	S-SYS		AFT		(auto)			C-SYS	10								
225	TUNING FREQUENCY (HIGHER PART)																POS 89
226	TUNING FREQUENCY (LOWER PART)																
227	S-SYS		AFT		(auto)			C-SYS	10								
228	TUNING FREQUENCY (HIGHER PART)																POS 90
229	TUNING FREQUENCY (LOWER PART)																
22A	S-SYS		AFT		(auto)			C-SYS	10								
22B	TUNING FREQUENCY (HIGHER PART)																POS 91
22C	TUNING FREQUENCY (LOWER PART)																
22D	S-SYS		AFT		(auto)			C-SYS	10								
22E	TUNING FREQUENCY (HIGHER PART)																POS 92
22F	TUNING FREQUENCY (LOWER PART)																
230	S-SYS		AFT		(auto)			C-SYS	10								
231	TUNING FREQUENCY (HIGHER PART)																POS 93
232	TUNING FREQUENCY (LOWER PART)																
233	S-SYS		AFT		(auto)			C-SYS	10								
234	TUNING FREQUENCY (HIGHER PART)																POS 94
235	TUNING FREQUENCY (LOWER PART)																
236	S-SYS		AFT		(auto)			C-SYS	10								
237	TUNING FREQUENCY (HIGHER PART)																POS 95
238	TUNING FREQUENCY (LOWER PART)																
239	S-SYS		AFT		(auto)			C-SYS	10								
23A	TUNING FREQUENCY (HIGHER PART)																POS 96
23B	TUNING FREQUENCY (LOWER PART)																
23C	S-SYS		AFT		(auto)			C-SYS	10								
23D	TUNING FREQUENCY (HIGHER PART)																POS 97
23E	TUNING FREQUENCY (LOWER PART)																
23F	S-SYS		AFT		(auto)			C-SYS	10								
MODEL									MODEL								
LETTER NO.									LETTER NO.								

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14AP1

ADDRESS	DATA								MICON	E²PROM	E²PROM	CHASSIS		CTV FINAL		LAST INITIAL	
(HEX)	D7	D6	D5	D4	D3	D2	D1	D0	DEFAULT	RANGE	WRITE(CPU)	CHECK DATA	CHECK TYPE	CHECK DATA	CHECK TYPE	SETTING DATA	REMARK
240	TUNING FREQUENCY (HIGHER PART)																POS 98
241	TUNING FREQUENCY (LOWER PART)																
242	S-SYS			AFT	(auto)			C-SYS	10								
243	TUNING FREQUENCY (HIGHER PART)																POS 99
244	TUNING FREQUENCY (LOWER PART)																
245	S-SYS			AFT	(auto)			C-SYS	10								
246																	AV1
247																	
248					(auto)			C-SYS	10								
249																	AV2
24A																	
24B					(auto)			C-SYS	10								
24C																	GAME
24D																	
24E					(auto)			C-SYS	10								
24F																	
250																	
251																	
252																	
253																	
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256																	
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258																	
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269																	
26A																	
26B																	
26C																	
26D																	
26E																	
26F																	
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274																	
275																	
276																	
277																	
278																	
279																	
27A																	
27B																	
27C																	
27D																	
27E																	
27F																	
MODEL									MODEL								
LETTER NO.									LETTER NO.								

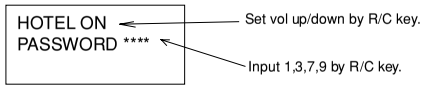
HOTEL MODE APPLICATION NOTE

The purpose of this HOTEL MODE is to enable hotel authorized person to store the tuned programs as hotel channels, current volume as hotel volume, picture and sound setting. In addition, the end user will not be able to select Preset and Channel-setting functions.

How to enable/disable the "Hotel Mode" ?

Ans: a) Select BLUE BACK function (under MENU-FEATURE selection) by R/C, press the -/-- (one/two digit) key and keep pressing it for five second, then you can see the hotel mode with four digits password.

b) Key in the four digits password starting with number "1", "3", "7", "9", then the hotel mode will be ENABLE condition, you can switch on/off the hotel mode by using R/C (volume up/down) key.



#1 Ch 1 is your selected channel for hotel mode.

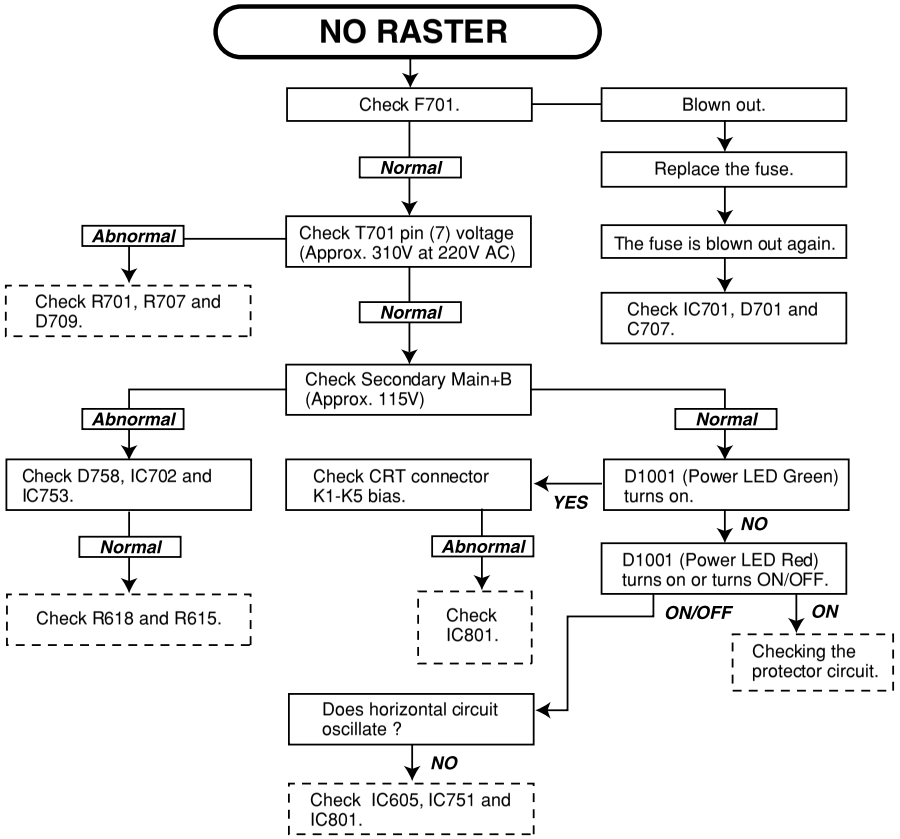
* We recommend:
Before set the hotel mode, it is better to choose CH 1 & set SOUND VOLUME level Up to 75% full scale.
After set hotel mode, starting channel will be always ch 1 & maximum sound level out will be set to 75% of full scale.

* If you set hotel mode in AV, starting channel will be the last ch which you received before power off (same as normal operation)

CONDITION:

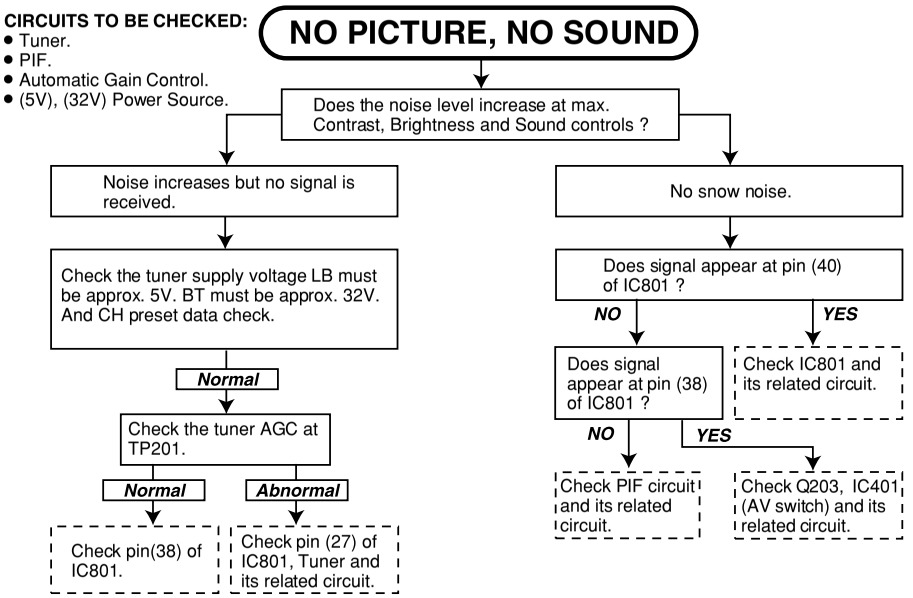
When using hotel mode, the end user can ONLY control PICTURE, SOUND and FEATURE selection. But, it will return to the previous hotel mode setting condition, after power off.
The end user can't use: — CH-SETTING (OSD become violet) and Preset. The other function is allowed to be used.

TROUBLE SHOOTING TABLE

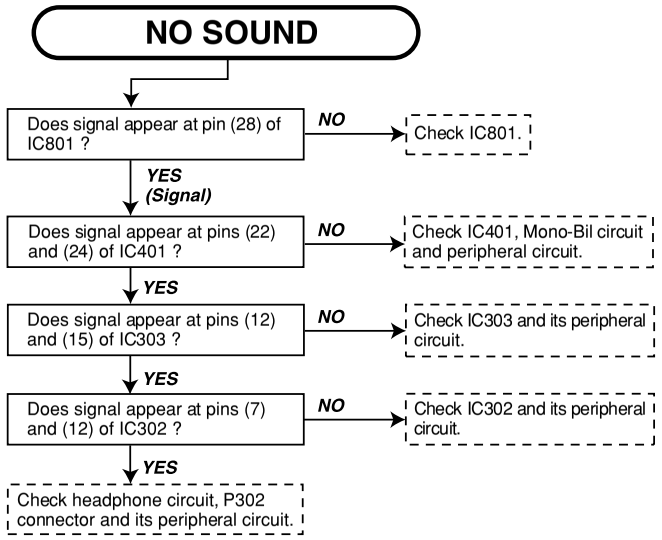


TROUBLE SHOOTING TABLE (Continued)

CIRCUITS TO BE CHECKED:
- Tuner.
- PIF.
- Automatic Gain Control.
- (5V), (32V) Power Source.


NO PICTURE, NO SOUND
Does the noise level increase at max. Contrast, Brightness and Sound controls ?
Noise increases but no signal is received.
No snow noise.
Check the tuner supply voltage LB must be approx. 5V. BT must be approx. 32V. And CH preset data check.
Does signal appear at pin (40) of IC801 ?
NO
YES
Does signal appear at pin (38) of IC801 ?
Check IC801 and its related circuit.
Normal
NO
YES
Check the tuner AGC at TP201.
Check PIF circuit and its related circuit.
Check Q203, IC401 (AV switch) and its related circuit.
Normal
Abnormal
Check pin(38) of IC801.
Check pin (27) of IC801, Tuner and its related circuit.

CIRCUITS TO BE CHECKED:
- Sound system pin (28) of IC801.
- AV Switch Circuit.
- Surround Circuit.
- Audio Output Circuit.


NO SOUND
Does signal appear at pin (28) of IC801 ?
NO
Check IC801.
YES (Signal)
Does signal appear at pins (22) and (24) of IC401 ?
NO
Check IC401, Mono-Bil circuit and peripheral circuit.
YES
Does signal appear at pins (12) and (15) of IC303 ?
NO
Check IC303 and its peripheral circuit.
YES
Does signal appear at pins (7) and (12) of IC302 ?
NO
Check IC302 and its peripheral circuit.
YES
Check headphone circuit, P302 connector and its peripheral circuit.

TROUBLE SHOOTING TABLE (Continued)

NEITHER VERTICAL NOR HORIZONTAL SYNCHRONIZATION

CIRCUIT TO BE CHECKED:
- Sync. Separator Circuit.

Check pins(16), (17) and (34) of IC801.

DEFECTIVE VERTICAL AMP. AND VERTICAL LINEARITY

Readjust vertical size. (Bas Data)

Vertical linearity and size is abnormal.

Check R504, R503, R506, R513, C517 and D501.

NO VERTICAL SCAN

Check IC501.

- *Normal* → Check C503 and C507.
- *Abnormal* → Check IC501.

TROUBLE SHOOTING TABLE (Continued)

NO SPECIFIC COLOUR

Is some colour produced in B/W broadcast reception ?

- *NO* → Check IC801, R801, R802, R803, D804, D805, D806 and Q801.
- *YES* → Is the white balance properly adjusted ?
  - *NO* → Readjust the white balance.
  - *YES* →
    - The picture colour is cyan. → Check Q871, Q883 and their adjacent circuits.
    - The picture colour is magenta. → Check Q870, Q885 and their adjacent circuits.
    - The picture colour is yellow. → Check Q872, Q887 and their adjacent circuits.

NO SPECIFIC COLOUR "PAL" (NO COLOUR SYNCHRONIZATION)

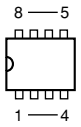
Check IC801 and bias control circuit.

Normal

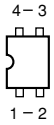
Check X1001.(12MHz)

SOLID STATE DEVICE BASE DIAGRAM

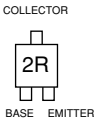
TOP VIEW



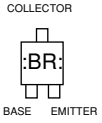
M24C08W



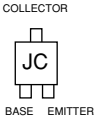
FX0008GE



D601A



B709AR



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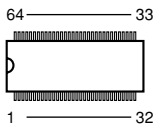
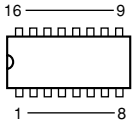
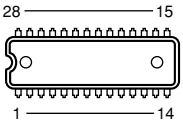


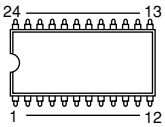
iX3411CEN0



TDA9821

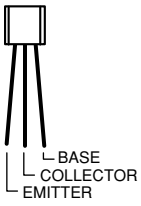


M52797SP

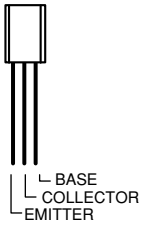


AN5891K+

SIDE VIEW

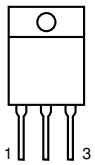


2SA1015
2SC1815

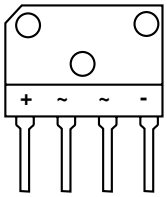


2SC2482

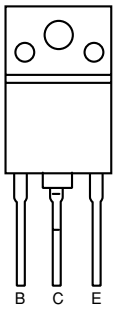
PST573J



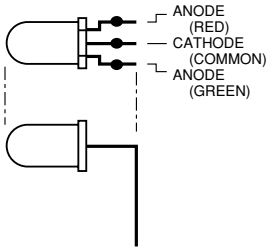
SE115N



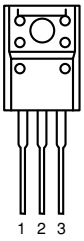
DX0386CE



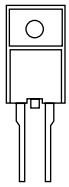
2SD2586



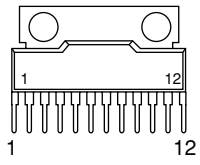
PX0423CE



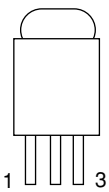
KA7808
KA7805



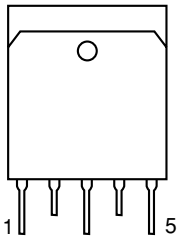
DX0445CE



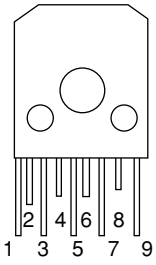
AN5276



TA48M033

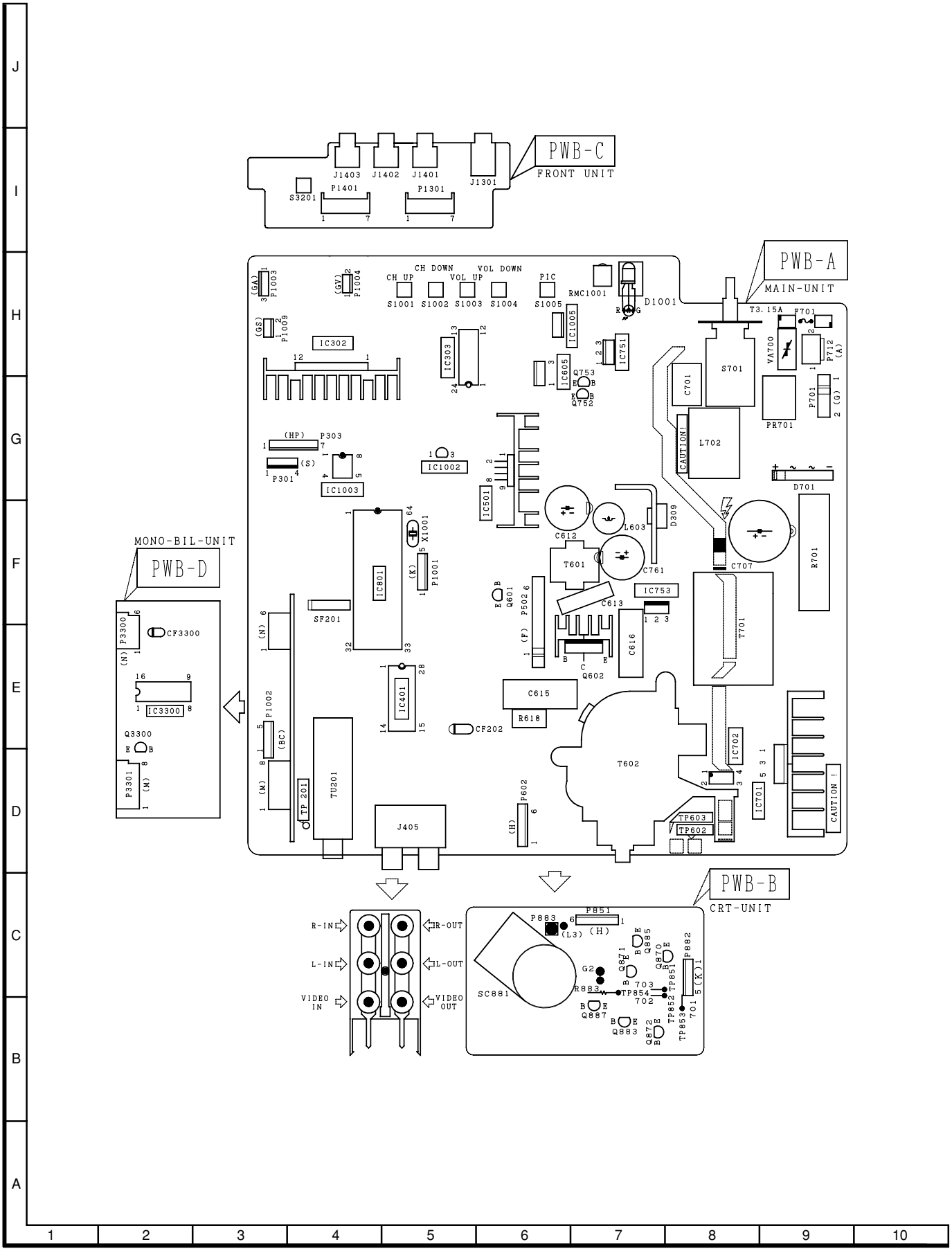


STRF6654



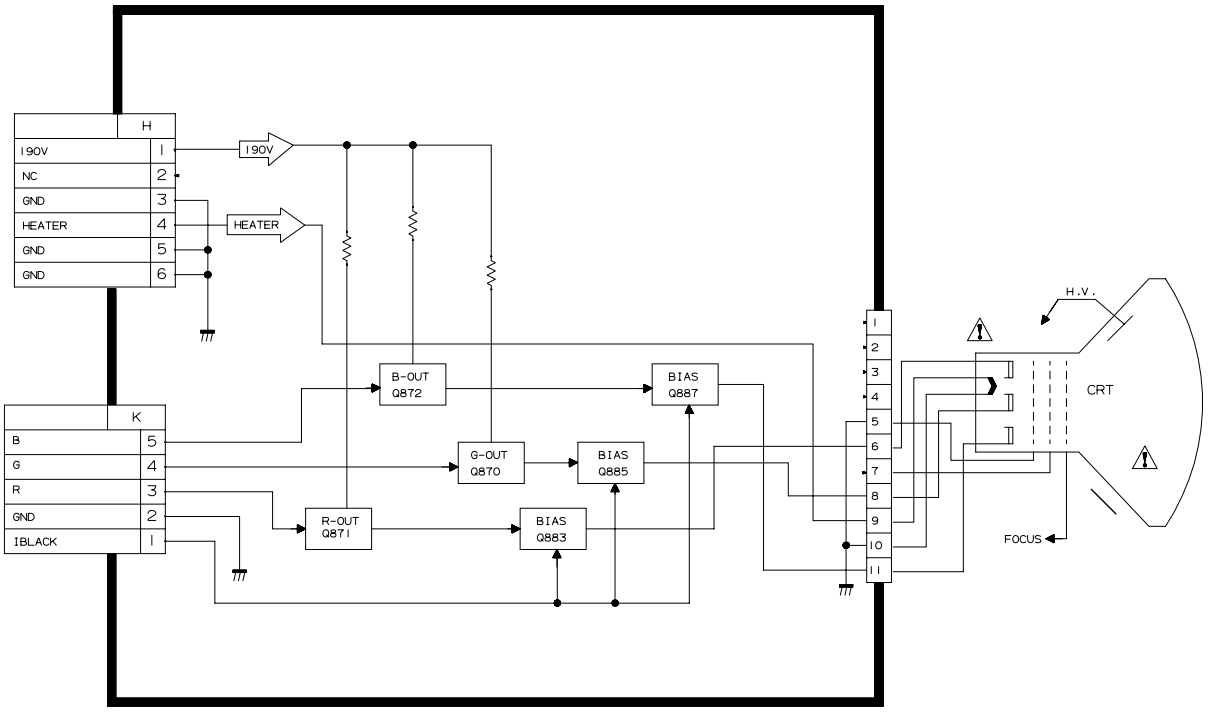
TDA8357

MODEL 14AP1 CHASSIS LAYOUT

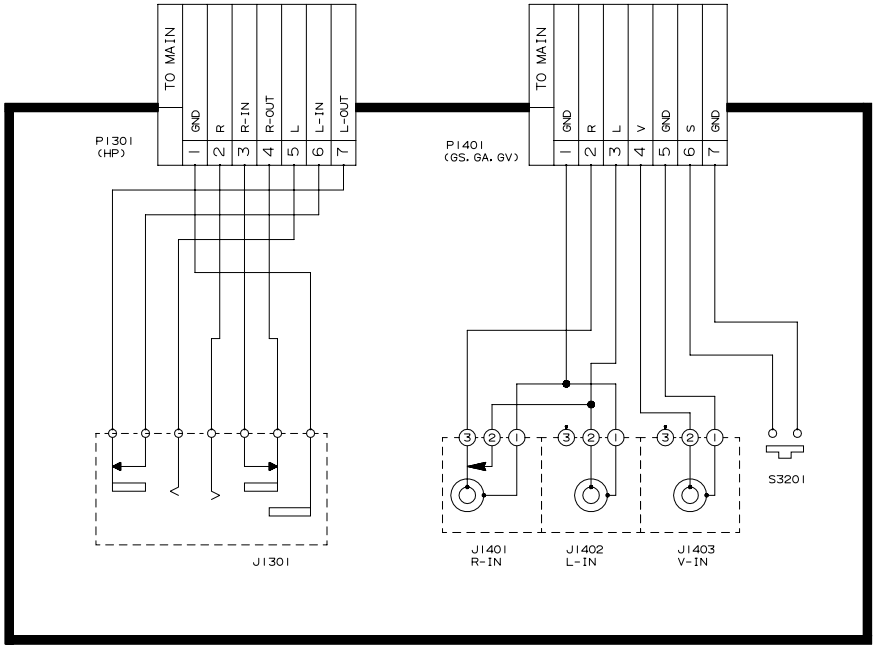


BLOCK DIAGRAM
MODEL 14AP1 CRT BLOCK/FRONT BLOCK

CRT UNIT

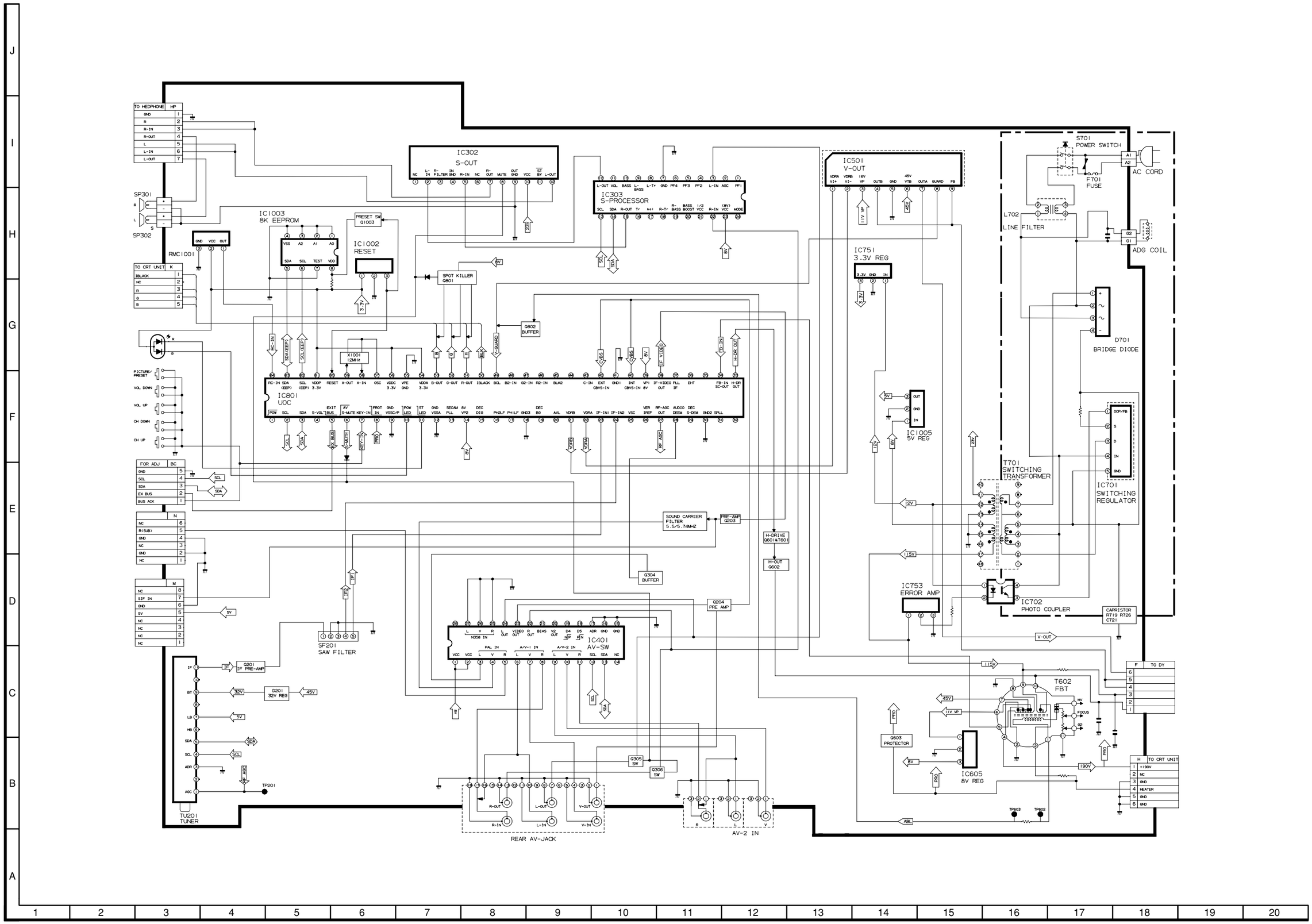


FRONT UNIT

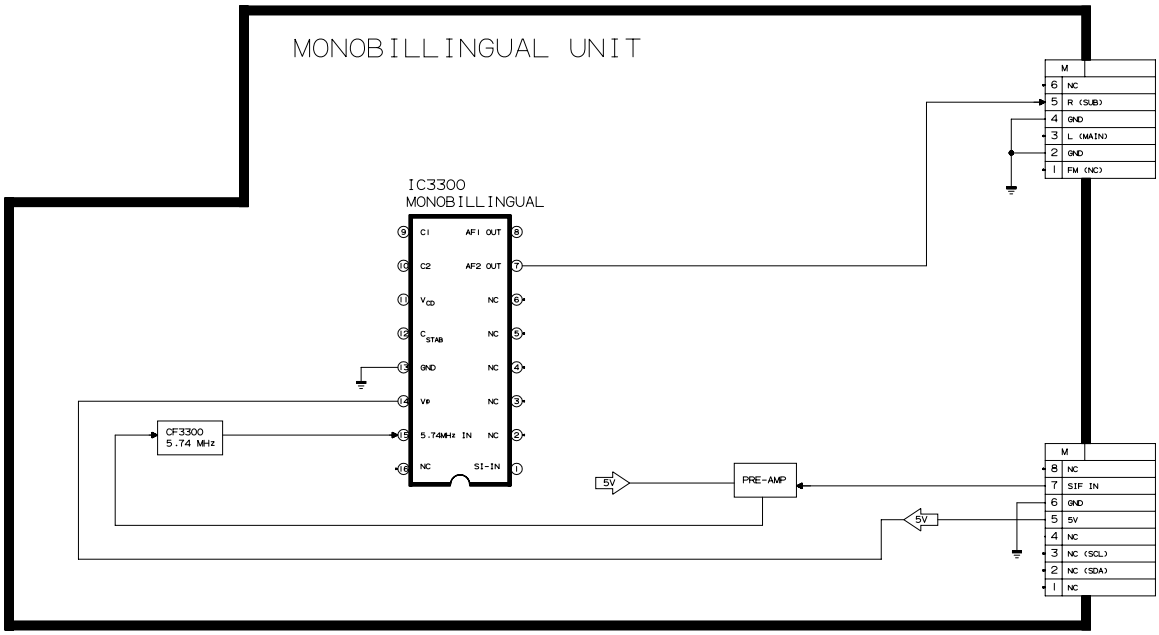


14AP1

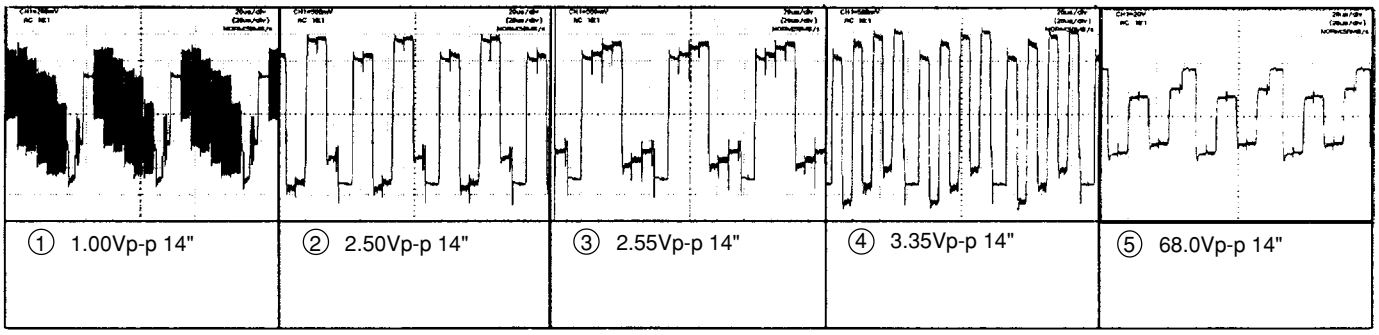
BLOCK DIAGRAM: MODEL 14AP1 MAIN BLOCK



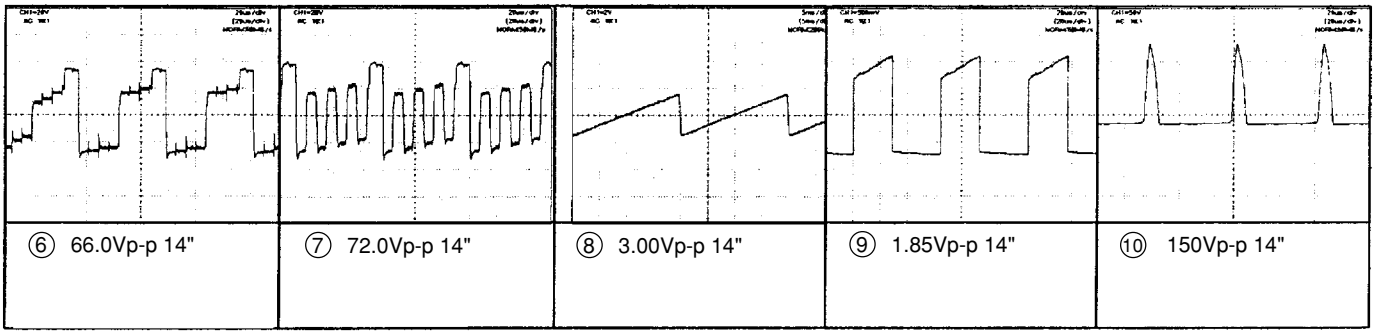
BLOCK DIAGRAM
MODEL 14AP1 MONO-BILINGUAL BLOCK



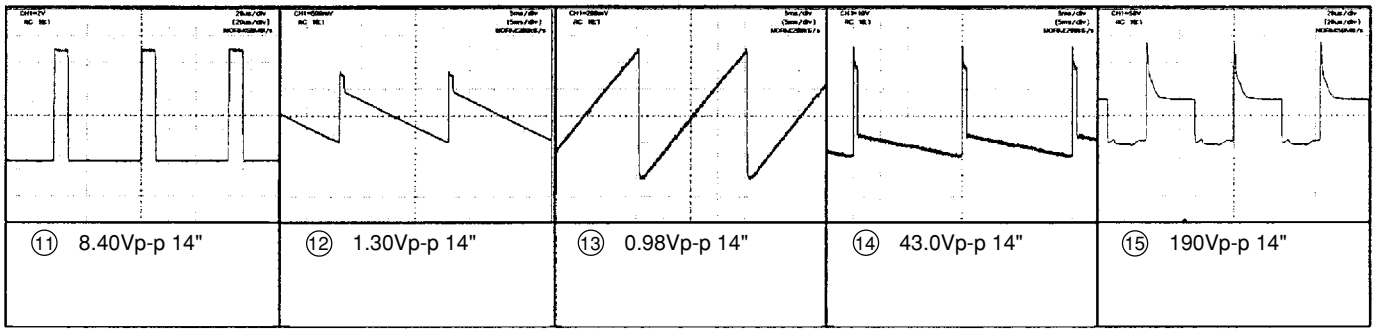
WAVEFORMS



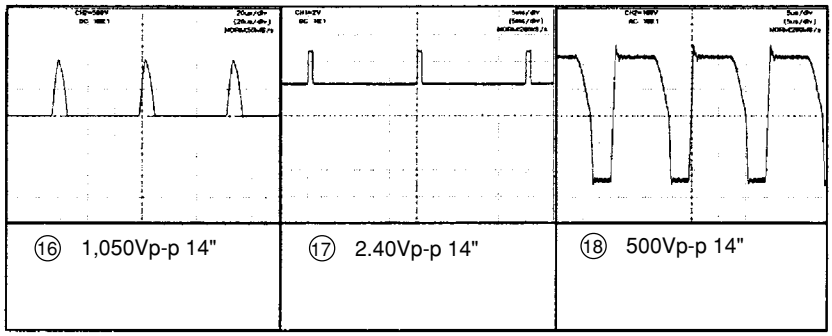
① 1.00Vp-p 14" ② 2.50Vp-p 14" ③ 2.55Vp-p 14" ④ 3.35Vp-p 14" ⑤ 68.0Vp-p 14"



⑥ 66.0Vp-p 14" ⑦ 72.0Vp-p 14" ⑧ 3.00Vp-p 14" ⑨ 1.85Vp-p 14" ⑩ 150Vp-p 14"



⑪ 8.40Vp-p 14" ⑫ 1.30Vp-p 14" ⑬ 0.98Vp-p 14" ⑭ 43.0Vp-p 14" ⑮ 190Vp-p 14"



⑯ 1,050Vp-p 14" ⑰ 2.40Vp-p 14" ⑱ 500Vp-p 14"

DESCRIPTION OF SCHEMATIC DIAGRAM

SAFETY NOTES:

1. *DISCONNECT THE AC PLUG FROM THE AC OUTLET BEFORE REPLACING PARTS.*
2. *SEMICONDUCTOR HEAT SINKS SHOULD BE REGARDED AS POTENTIAL SHOCK HAZARDS WHEN THE CHASSIS IS OPERATING.*

IMPORTANT SAFETY NOTICE:

PARTS MARKED WITH " ⚠ " ( ) ARE IMPOTANT FOR MAINTAINING THE SAFETY OF THE SET. BE SURE TO REPLACE THESE PARTS WITH SPECIFIED ONES FOR MAINTAINING THE SAFETY AND PERFORMANCE OF THE SET.

SERVICE PRECAUTION:

THE AREA ENCLOSED BY THIS LINE (── - ──) IS DIRECTLY CONNECTED WITH AC MAINS VOLTAGE.
WHEN SERVICING THE AREA, CONNECT AN ISOLATING TRANSFORMER BETWEEN TV RECEIVER AND AC LINE TO ELIMINATE HAZARD OF ELECTRIC SHOCK.

NOTES:

1. *The unit of resistance "ohm" is omitted. (K = 1000 ohms, M = Mega ohm).*
2. *All resistors are 1/8 watt, unless otherwise noted.*
3. *All capacitors are μF, unless otherwise noted. (P = μμF).*

VOLTAGE MEASUREMENT CONDITIONS:

1. *Voltages in parenthesis measured with no signal.*
2. *Voltages without parenthesis measured with 3mV B & W or Colour signal.*
3. *All the voltages in each point are measured with VTVM.*

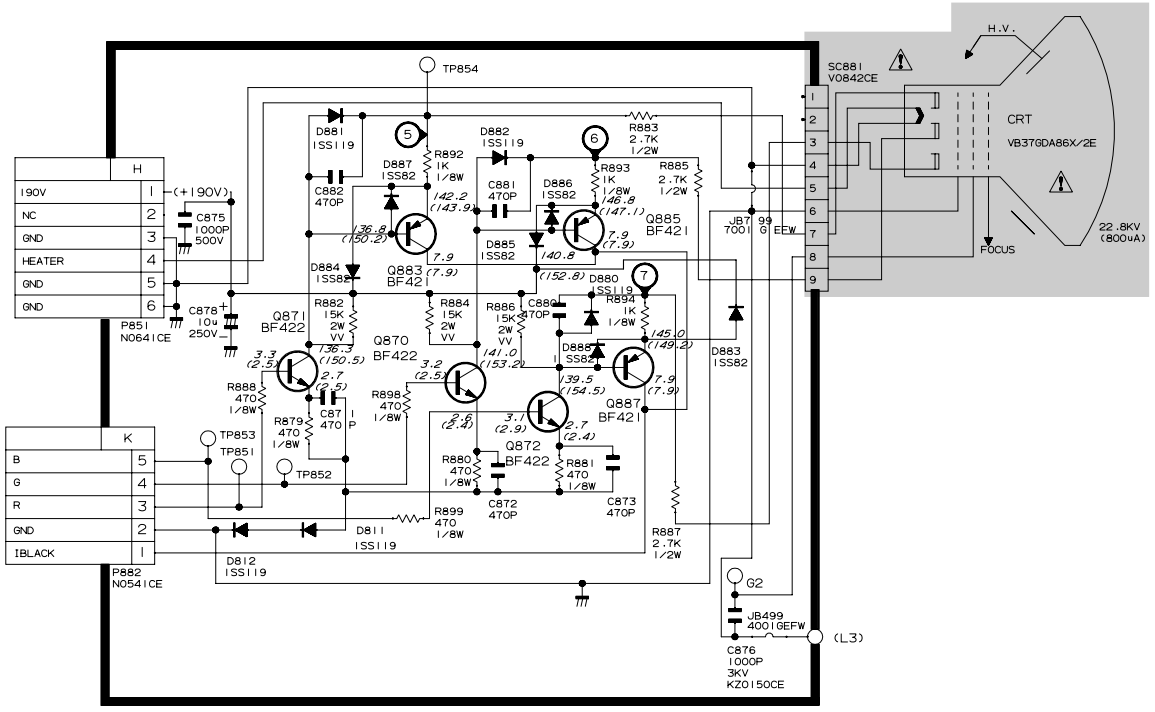
WAVEFORM MEASUREMENT CONDITIONS:

1. *The colour bar generator signal of 1.0V peak applied at pin (24) of IC201.*
2. *Approximately 4V AGC bias .*

SCHEMATIC DIAGRAM:
MODEL 14AP1 CRT UNIT/FRONT UNIT

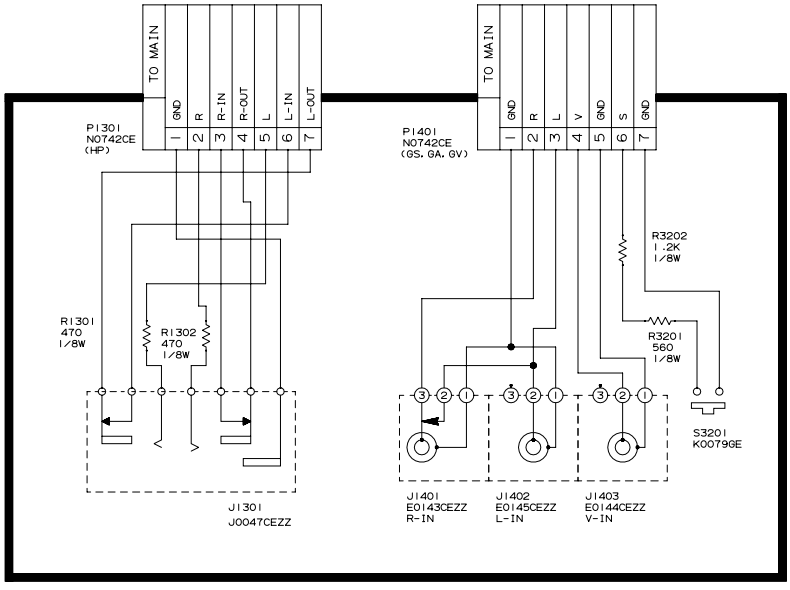
CRT

NOTE: 1.THE UNIT OF RESISTANCE "OHM" IS OMITTED
(K=1000 OHMS, M=MEGAOHM).
2.ALL RESISTORS ARE 1/8WATT.UNLESS OTHERWISE NOTED.
3.ALL CAPACITORS ARE uF.UNLESS OTHERWISE NOTED(P=uuF).



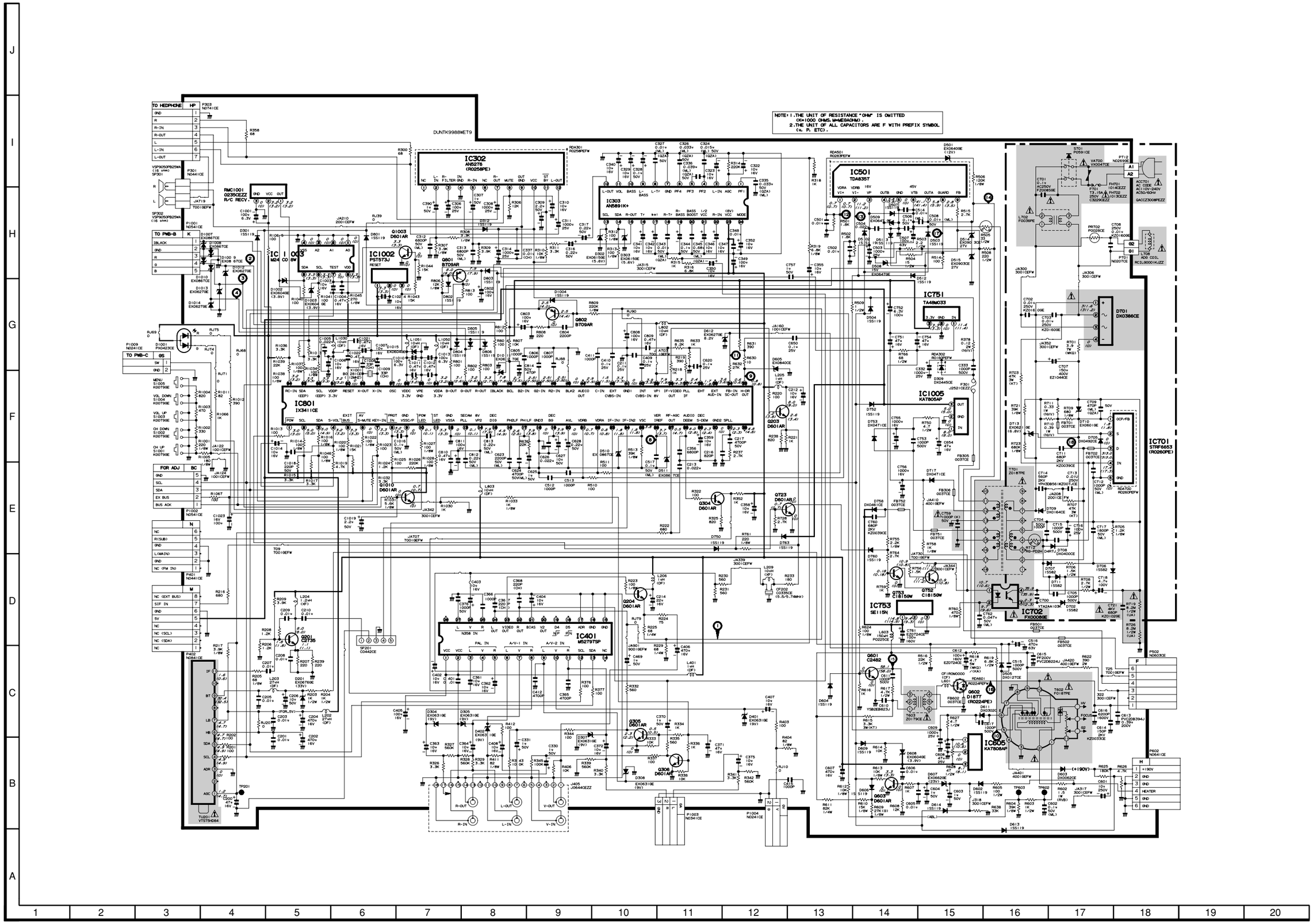
NOTE: 1.THE UNIT OF RESISTANCE "OHM" IS OMITTED
(K=1000 OHMS, M=MEGAOHM).
2.ALL RESISTORS ARE 1/8WATT.UNLESS OTHERWISE NOTED.
3.ALL CAPACITORS ARE uF.UNLESS OTHERWISE NOTED(P=uuF).

FRONT UNIT

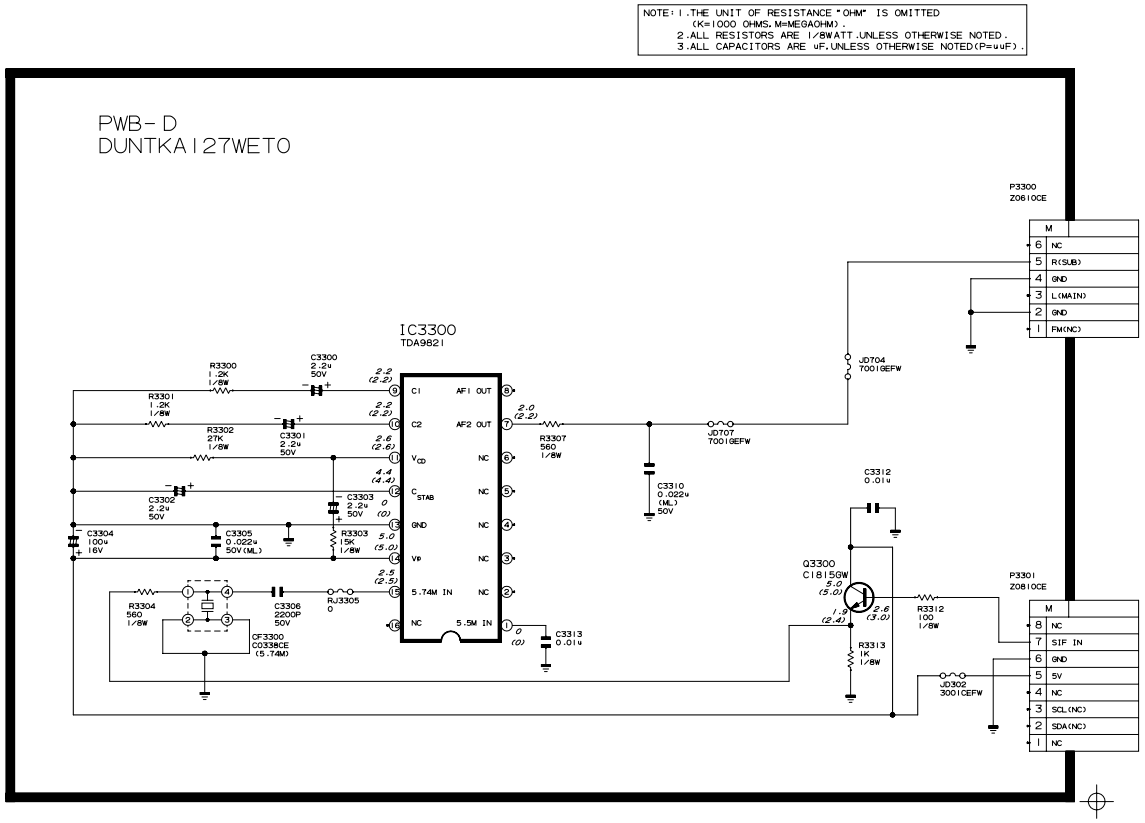


14AP1

SCHEMATIC DIAGRAM: MODEL 14AP1 MAIN Unit

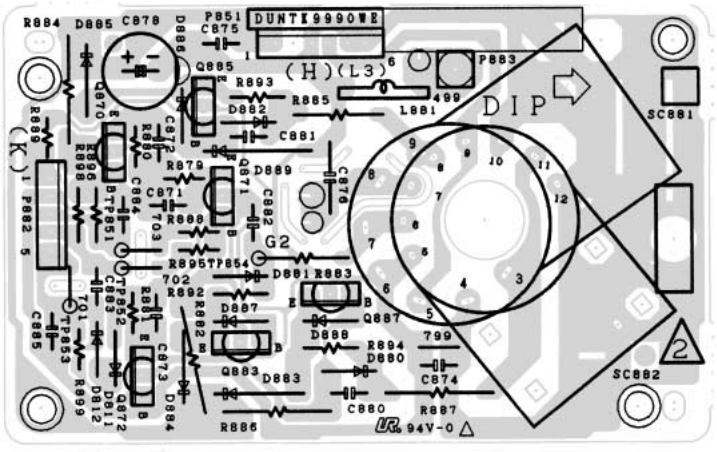

NOTE: 1.THE UNIT OF RESISTANCE "OHM" IS OMITTED (K=1000 OHMS, M=MEGAOHM).
2.THE UNIT OF ALL CAPACITORS ARE F WITH PREFIX SYMBOL (u, P, ETC).
IC302 AN6276 (N0258PE)
IC303 AN5891K+
IC501 TDA6357
IC751 TA48M033
IC1005 KA7805AP
IC801 1X3411CE
IC1002 PST573J
IC1003 M24 C08
IC401 M52797SP
IC753 SE115N
IC702 FX00080E
IC701 STRF6653 (N0260PE)
IC805 KA7808AP
Q1003 D601AR
Q1010 D601AR
Q802 BT09AR
Q801 BT09AR
Q201 C2735
Q304 D601AR
Q723 D601AR
Q204 D601AR
Q203 D601AR
Q306 D601AR
Q603 D601AR
Q801 C2482
Q602 D18TT (R0224PE)
Q753 C1815GW
Q752 C1815GW
TO HEDPHONE HP
TO PNB-B K
TO PNB-C GS
FOR ADJ BC
P303 N0741CE
P301 N0441CE
P1001 N0541CE
P1002 N0541CE
P401 N0441CE
P402 N0641CE
P1009 N0241CE
P1003 N0341CE
P1004 N0241CE
P502 N0603CE
SF302 VSP905DP825WA (16 ohm)
SF301 VSP905DP825WA (16 ohm)
SF201 C0442CE
JA719 7001GEFW
JA210 2001CEFW
JA1224 1001CEFW
JA1225 1001CEFW
JA707 7001GEFW
JA339 3001CEFW
JA300 3001CEFW
JA306 3001CEFW
JA352 3001CEFW
JA1401 4001GEFW
JA1410 4001GEFW
JA1344 3001GEFW
JA1345 3001GEFW
JA1346 3001GEFW
JA1347 3001GEFW
JA1348 3001GEFW
JA1349 3001GEFW
JA1350 3001GEFW
JA1351 3001GEFW
JA1352 3001GEFW
JA1353 3001GEFW
JA1354 3001GEFW
JA1355 3001GEFW
JA1356 3001GEFW
JA1357 3001GEFW
JA1358 3001GEFW
JA1359 3001GEFW
JA1360 3001GEFW
JA1361 3001GEFW
JA1362 3001GEFW
JA1363 3001GEFW

SCHEMATIC DIAGRAM
MODEL 14AP1 MONO-BILINGUAL UNIT

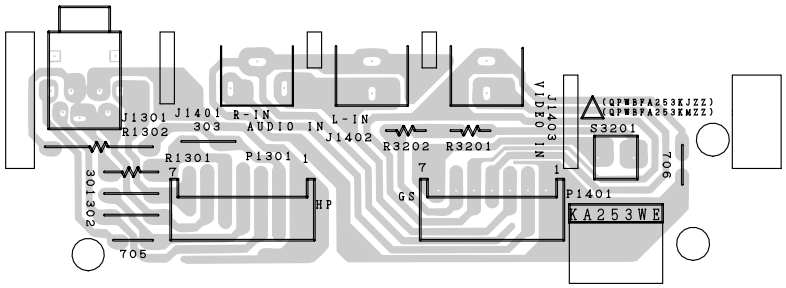


PRINTED WIRING BOARD ASSEMBLIES

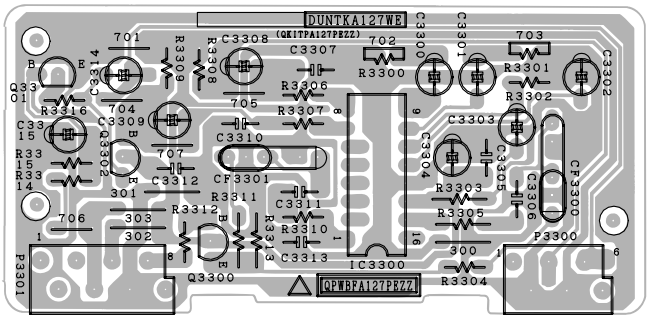
PWB-B: CRT Socket Unit (Wiring Side)



PWB-C: FRONT Unit (Wiring Side)



PWB-D: MONO-BILINGUAL Unit (Wiring Side)



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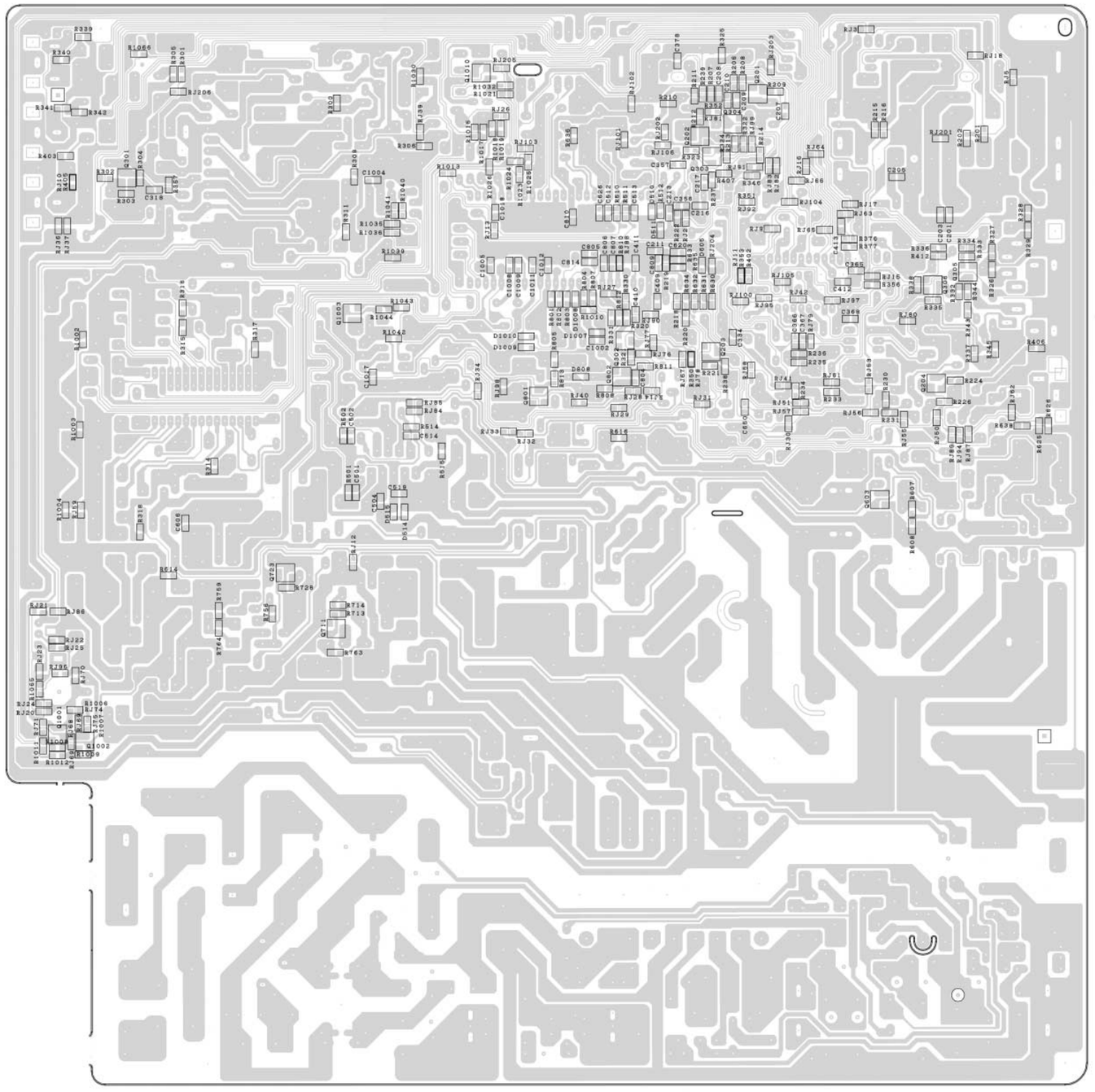
PWB-A: MAIN Unit (Wiring Side)



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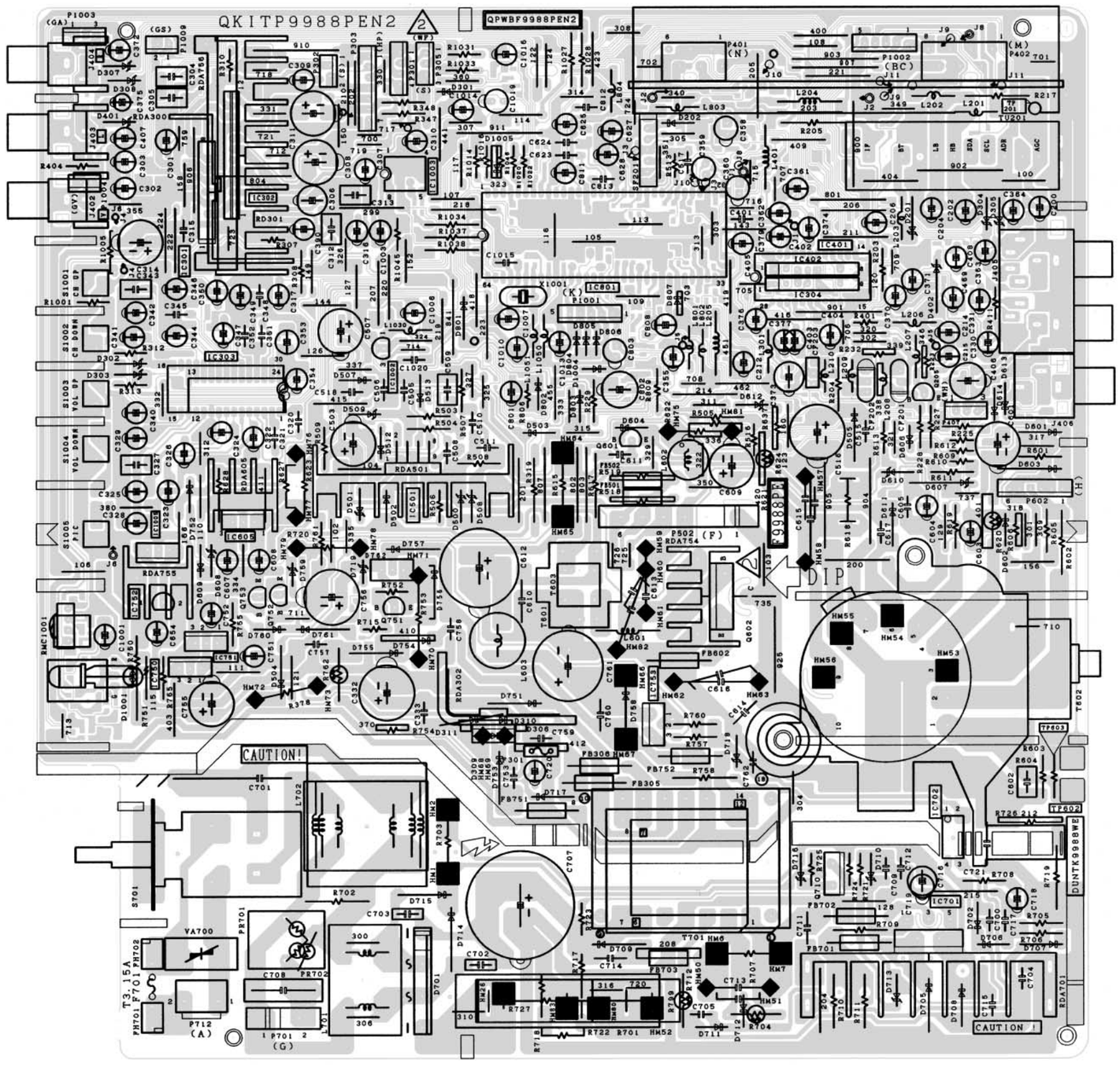
PWB-A: MAIN Unit (Component Side)



REPLACEMENT PARTS LIST

PARTS REPLACEMENT

Replacement parts which have these special safety characteristics are identified in this manual; electrical components having such features are identified by "⚠" in the Replacement Parts Lists.
The use of a substitute replacement part which does not have the same safety characteristics as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

1. **MODEL NUMBER**
2. **REF. NO.**
3. **PART NO.**
4. **DESCRIPTION**
5. **CODE**
4. **QUANTITY**

MARK ★ : SPARE PARTS-DELIVERY SECTION.

Ref. No.	Part No.	★	Description	Code
PICTURE TUBE				
⚠ L708	RCiLG0001KJZZ		Degaussing Coil	
	RCiLH0149PEN1	R	Deflection Yoke	BA
⚠	VB37GDA86X/2E	R	Picture Tube	BZ
	MSPRT0001PEFJ	R	Spring Grounding Strap	AC
	PMAGF3041CEZZ	R	Magnet	AG
	QCNW-0026KJZZ		Connecting Cord(SP)	
	QEARC1431CEZZ		Grounding Strap	
	LHLDW0003PEKZ	R	ADG Coil Holder, x4	AB
	LHLDW1003KJZZ		Holder	
	PSPAG0004KJZZ	R	Wegde(Gum), x3	AB
PRINTED WIRING BOARD ASSEMBLIES ***(NOT REPLACEMENT ITEM)***				
PWB-A	DUNTK9988WET9	-	MAIN UNIT	—
PWB-B	DUNTK9990WET4	-	CRT UNIT	—
PWB-C	DUNTKA253WET0	-	FRONT UNIT	—
PWB-D	DUNTKA127WET0	-	MONO-BILINGUAL UNIT	—
DUNTK9988WET9 PWB-A:MAIN UNIT				
TUNER				
NOTE: THE PARTS HERES SHOWN ARE SUPPLIED AS AN ASSEMBLY NOT INDEPENDENTLY.				
⚠ TU201	VTUVTST5HD84/	R	Tuner	BB
INTEGRATED CIRCUITS				
IC302	VHiAN5276//-1	R	AN5276	AR
IC303	VHiAN5891K+-1	R	AN5891K	AQ
IC401	VHiM52797SP-1	R	M52797SP	AP
IC501	VHiTDA8357/-1	R	TDA8357	AN
IC605	VHiKA7808AP-1	R	KA7808AP	AE
IC701	VHiSTRF6653-1	R	STRF6653	AS
IC751	VHiTA48M033-1	R	TA48M033F	AH
IC753	VHiSE115N//-1	R	SE115N	AF
IC801	RH-iX3411CEN3	R	IX3411CEN3	
IC1002	VHiPST573J/-1	R	PST573J, Reset	AE
IC1003	VHiM24C08W/-1	R	M24C08W	AH
IC1005	VHiKA7805AP-1	R	KA7805AP	AE
TRANSISTORS				
Q201	VS2SC2735//1E	R	2SC2735	AC
Q203	VS2SD601AR/-1	R	2SD601AR	AC
Q204	VS2SD601AR/-1	R	2SD601AR	AC
Q304	VS2SD601AR/-1	R	2SD601AR	AC
Q305	VS2SD601AR/-1	R	2SD601AR	AC
Q306	VS2SD601AR/-1	R	2SD601AR	AC
Q601	VS2SC2482//-1	R	2SC2482	AD
Q602	VS2SD1877//1E	R	2SD1877	AL
Q603	VS2SD601AR/-1	R	2SD601AR	AC
Q723	VS2SD601AR/-1	R	2SD601AR	AC
Q752	VS2SC1815GW-1	R	2SC1815GW	AB
Q753	VS2SC1815GW-1	R	2SC1815GW	AB
Q801	VS2SB709AR/-1	R	2SB709AR	AC
Q802	VS2SB709AR/-1	R	2SB709AR	AC
Q1003	VS2SD601AR/-1	R	2SD601AR	AC
Q1010	VS2SD601AR/-1	R	2SD601AR	AC
DIODES				
D201	RH-EX0676GEZZ	R	Zener Diode	AA
D301	VHD1SS119//-1	R	1SS119	AB
D302	RH-EX0615GEZZ	R	Zener Diode	AA
D303	RH-EX0615GEZZ	R	Zener Diode	AA
D304	RH-EX0631GEZZ	R	Zener Diode	AA
D305	RH-EX0631GEZZ	R	Zener Diode	AA
D307	RH-EX0631GEZZ	R	Zener Diode	AA
D308	RH-EX0631GEZZ	R	Zener Diode	AA
D309	RH-DX0445CEZZ	R	DX0445CE	AL
D312	VHD1SS119//-1	R	1SS119	AB
D401	RH-EX0631GEZZ	R	Zener Diode	AA
D402	RH-EX0631GEZZ	R	Zener Diode	AA
D501	RH-EX0640GEZZ	R	Zener Diode	AA
D502	VHD1SS119//-1	R	1SS119	AB
D503	VHD1SS119//-1	R	1SS119	AB
D504	VHD1SS119//-1	R	1SS119	AB
D505	RH-DX0127CEZZ	R	DX0127CE	AC
D507	VHD1SS119//-1	R	1SS119	AB
D508	RH-EX0647GEZZ	R	Zener Diode	AA
D509	RH-EX0647GEZZ	R	Zener Diode	AA
D510	RH-EX0867CEZZ	R	Zener Diode	AC
D511	RH-EX0867CEZZ	R	Zener Diode	AC
D512	VHD1SS119//-1	R	1SS119	AB
D513	VHD1SS119//-1	R	1SS119	AB
D514	RH-EX0903CEZZ	R	Zener Diode	AC
D515	RH-EX0903CEZZ	R	Zener Diode	AC
D602	VHD1SS119//-1	R	1SS119	AB
D603	RH-DX0062CEZZ	R	DX0062CE	AD
D604	VHD1SS119//-1	R	1SS119	AB
D605	RH-EX0840CEZZ	R	Zener Diode	AC
D606	VHD1SS119//-1	R	1SS119	AB
D607	RH-EX0662GEZZ	R	Zener Diode	AB
D608	RH-EX0604GEZZ	R	Zener Diode	AB
D609	VHD1SS119//-1	R	1SS119	AB
D611	RH-DX0302CEZZ	R	DX0302CE	AC
D612	RH-EX0627GEZZ	R	Zener Diode	AA
D613	VHD1SS119//-1	R	1SS119	AB
D614	VHD1SS119//-1	R	1SS119	AB
D701	RH-DX0386CEZZ	R	DX0386CE	AG
D702	VHD1SS82///1A	R	1SS82	AC
D705	RH-DX0492CEZZ	R	DX0492CE	AE
D706	VHD1SS82///1A	R	1SS82	AC
D707	VHD1SS82///1A	R	1SS82	AC
D708	RH-DX0400CEZZ	R	DX0400CE	AC
D709	RH-DX0164CEZZ	R	DX0164CE	AC
D710	RH-EX0601GEZZ	R	Zener Diode	AA
D711	VHD1SS82///1A	R	1SS82	AC
D713	RH-EX0621GEZZ	R	Zener Diode	AB
D717	RH-DX0471CEZZ	R	DX0471CE	AE
D750	VHD1SS119//-1	R	1SS119	AB
D752	VHD1SS119//-1	R	1SS119	AB
D753	RH-DX0471CEZZ	R	DX0471CE	AE

Ref. No.	Part No.	★	Description	Code
D758	RH-DX0461CEZZ	R	DX0461CE	AG
D760	VHD1SS119//-1	R	1SS119	AB
D763	VHD1SS119//-1	R	1SS119	AB
D801	VHD1SS119//-1	R	1SS119	AB
D802	VHD1SS119//-1	R	1SS119	AB
D803	VHD1SS119//-1	R	1SS119	AB
D804	VHD1SS119//-1	R	1SS119	AB
D805	VHD1SS119//-1	R	1SS119	AB
D806	VHD1SS119//-1	R	1SS119	AB
D1001	RH-PX0423CEZZ	R	PhotoDiode	AD
D1002	RH-EX0604GEZZ	R	Zener Diode	AB
D1003	RH-EX0604GEZZ	R	Zener Diode	AB
D1004	VHD1SS119//-1	R	1SS119	AB
D1007	RH-EX0867CEZZ	R	Zener Diode	AC
D1008	RH-EX0867CEZZ	R	Zener Diode	AC
D1009	RH-EX0867CEZZ	R	Zener Diode	AC
D1010	RH-EX0867CEZZ	R	Zener Diode	AC
D1011	RH-EX0627GEZZ	R	Zener Diode	AA
D1012	RH-EX0627GEZZ	R	Zener Diode	AA
D1013	RH-EX0627GEZZ	R	Zener Diode	AA
D1014	RH-EX0627GEZZ	R	Zener Diode	AA
D1015	RH-EX0604GEZZ	R	Zener Diode	AB
⚠ IC702	RH-FX0008GEZZ	R	PC123FY8	AE
⚠ VA700	RH-VX0047CEZZ	R	Varistor	AF

PACKAGED CIRCUITS

PR702	RMPTP0028CEZZ	R	Packaged Circuit	AG
X1001	RCRSB0281CEZZ	R	Crystal, CRSB0281CE	AG

FILTERS

CF202	RFiLC0335CEZZ		Filter, FiLC0335CE	
SF201	RFiLC0442CEZZ	R	Filter, FiLC0442CE	AL

COILS

L202	VP-DF270K0000	R	Peaking, 27µH	AB
L203	VP-DF270K0000	R	Peaking, 27µH	AB
L204	VP-XF1R2K0000	R	Peaking, 1.2µH	AB
L205	VP-DF1R0K0000	R	Peaking, 1µH	AB
L206	VP-DF1R0K0000	R	Peaking, 1µH	AB
L209	VP-XF100K0000	R	Peaking, 10µH	AB
L401	VP-DF1R0K0000	R	Peaking, 1µH	AB
L601	VP-CF1R0M0000	R	Peaking, 1µH	AB
L603	RCiLP0225CEZZ	R	Coil, CiLP0225CE	AF
⚠ L702	RCiLF0036PEZZ	R	Coil, CiLF0036PE	AN
L802	VP-DF100K0000	R	Peaking, 10µH	AB
L803	VP-DF100K0000	R	Peaking, 10µH	AB
L1030	VP-DF100K0000	R	Peaking, 10µH	AB
L1050	VP-DF100K0000	R	Peaking, 10µH	AB
L1051	VP-DF100K0000	R	Peaking, 10µH	AB

TRANSFORMERS

⚠ T602	RTRNF0187PEZZ		H-Volt Transformer	
⚠ T603	RTRNZ0179CEZZ	R	Transformer	AE
⚠ T701	RTRNZ0187PEZZ	R	Transformer	AR

CAPACITORS

C200	VCEA0A1CW476M	R	47	16V	Electrolytic	AB
C201	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C202	VCEA0A1CW477M	R	470	16V	Electrolytic	AC
C203	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C204	VCEA0A1CW477M	R	470	16V	Electrolytic	AC
C205	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C206	VCEA0A1HW106M	R	10	50V	Electrolytic	AB
C207	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C208	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C209	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C210	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C211	VCKYCY1EF104Z	R	0.1	25V	Ceramic	AA
C212	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C213	VCKYCY1HF223Z	R	0.022	50V	Ceramic	AB
C214	VCEA0A1CW226M	R	22	16V	Electrolytic	AB
C216	VCKYCY1HB821K	R	820p	50V	Ceramic	AA
C217	VCKYCY1HB472K	R	4700p	50V	Ceramic	AA
C306	VCEA0A1EW107M	R	100	25V	Electrolytic	AC
C307	VCEA0A1HW105M	R	1	50V	Electrolytic	AB
C308	VCEA0A1EW108M	R	1000	25V	Electrolytic	AD
C309	VCEA0A1HW225M	R	2.2	50V	Electrolytic	AB
C310	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C311	VCEA0A1EW108M	R	1000	25V	Electrolytic	AD
C312	VCQYTA1HM682J	R	6800p	50V	Mylar	AB
C313	VCQYTA1HM682J	R	6800p	50V	Mylar	AB
C314	VCEA0A1EW108M	R	1000	25V	Electrolytic	AD
C316	VCEA0A1HW224M	R	0.22	50V	Electrolytic	AB
C317	VCEA0A1HW224M	R	0.22	50V	Electrolytic	AB
C322	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C323	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C324	VCQYTA1HM153J	R	0.015	50V	Mylar	AA
C326	VCQYTA1HM333J	R	0.033	50V	Mylar	AA
C327	VCQYTA1HM103J	R	0.01	50V	Mylar	AA
C328	VCEA0A1HW104M	R	0.1	50V	Electrolytic	AB
C329	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C330	VCEA0A1HW105M	R	1	50V	Electrolytic	AB
C331	VCEA0A1HW105M	R	1	50V	Electrolytic	AB
C332	VCEA0A1EW108M	R	1000	25V	Electrolytic	AD
C333	VCKYPA2HB102K	R	1000p	500V	Ceramic	AA
C335	VCQYTA1HM333J	R	0.033	50V	Mylar	AA
C336	VCQYTA1HM393J	R	0.039	50V	Mylar	AA
C337	VCKYCY1HB103K	R	0.01	50V	Ceramic	AA
C340	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C341	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C342	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C343	VCQYTA1HM103J	R	0.01	50V	Mylar	AA
C344	VCEA0A1HW104M	R	0.1	50V	Electrolytic	AB
C345	VCFYFA1HA684J	R	0.68	50V	Mylar	AD
C346	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C347	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C348	VCKYPA1HF103Z	R	0.01	50V	Ceramic	AA
C349	VCEA0A1CW107M	R	100	16V	Electrolytic	AC
C350	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C352	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C355	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C356	VCKYCY1HB682K	R	6800p	50V	Ceramic	AA
C358	VCEA9M1CW106M	R	10	16V	Electrolytic	AB
C359	VCEA9M1CW106M	R	10	16V	Electrolytic	AB
C361	VCE9GA1CW106M	R	10	16V	Electrolytic	AB
C362	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C363	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C364	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C365	VCKYCY1HB472K	R	4700p	50V	Ceramic	AA
C366	VCKYCY1HB102K	R	1000p	50V	Ceramic	AA
C367	VCCCCY1HH221J	R	220p	50V	Ceramic	AA
C368	VCCCCY1HH221J	R	220p	50V	Ceramic	AA
C370	VCEA0A1HW105M	R	1	50V	Electrolytic	AB
C371	VCEA0A1CW476M	R	47	16V	Electrolytic	AB
C372	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C375	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C376	VCKYPA1HB102K	R	1000p	50V	Ceramic	AA
C390	VCEA0A1HW105M	R	1	50V	Electrolytic	AB
C401	VCKYPA1HF103Z	R	0.01	50V	Ceramic	AA
C402	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C403	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C404	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C405	VCEA0A1CW107M	R	100	16V	Electrolytic	AC
C406	VCEA0A1CW477M	R	470	16V	Electrolytic	AC
C407	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C408	VCEA0A1CW106M	R	10	16V	Electrolytic	AB
C409	VCKYCY1EF104Z	R	0.1	25V	Ceramic	AA
C410	VCKYCY1EF104Z	R	0.1	25V	Ceramic	AA
C411	VCKYCY1HB102K	R	1000p	50V	Ceramic	AA
C412	VCKYCY1HB472K	R	4700p	50V	Ceramic	AA
C415	VCKYCY1HB102K	R	1000p	50V	Ceramic	AA
C469	VCEA0A1HW105M	R	1	50V	Electrolytic	AB
C501	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C502	VCKYCY1HF103Z	R	0.01	50V	Ceramic	AA
C503	VCEA0A1EW108M	R	1000	25V	Electrolytic	AD
C504	VCKYCY1HF223Z	R	0.022	50V	Ceramic	AB
C506	VCQYTA1HM104J	R	0.1	50V	Mylar	AA
C507	VCEA0A1JW107M	R	100	63V	Electrolytic	AC
C508	VCQYTA1HM103J	R	0.01	50V	Mylar	AA
C512	VCKYCY1HB102K	R	1000p	50V	Ceramic	AA
C513	VCKYCY1HB102K	R	1000p	50V	Ceramic	AA
C514	VCKYPA1HF103Z	R	0.01	50V	Ceramic	AA
C515	VCKYPA2HB102K	R	1000p	500V	Ceramic	AA
C516	VCEA0A1JW477M	R	470	63V	Electrolytic	AE

Ref. No.	Part No.	★	Description	Code
C517	VCQYTA1HM104J	R	0.1 50V Mylar	AA
C601	VCEAGA2EW106M	R	10 250V Electrolytic	AC
C602	VCQYTA1HM104J	R	0.1 50V Mylar	AA
C603	VCEA0A1HW105M	R	1 50V Electrolytic	AB
C604	VCEA0A1HW105M	R	1 50V Electrolytic	AB
C605	VCKYPA1HF103Z	R	0.01 50V Ceramic	AA
C606	VCKYCY1HF103Z	R	0.01 50V Ceramic	AA
C607	VCEA0A1CW477M	R	470 16V Electrolytic	AC
C608	VCEA0A1EW476M	R	47 25V Electrolytic	AB
C609	VCEA0A1EW108M	R	1000 25V Electrolytic	AD
C610	VCFYSB2EB823J	R	0.082 250V Metallized Polypro Film	AD
C611	VCKYPA2HB102K	R	1000p 500V Ceramic	AA
C612	RC-EZ0724CEZZ	R	100 160V Electrolytic	AG
C613	VCFPVC2DB394J	R	0.39 200V Metallized Polypro Film	AE
C614	RC-KZ0033CEZZ	R	150p 2kV Ceramic	AB
C615	VCFPVC2DB224J	R	0.22 200V Metallized Polypro Film	AE
C616	VCFPPD3CA622H	R	6200p 1600V Metallized Polypro Film	AE
C617	VCKYPA2HB102K	R	1000p 500V Ceramic	AA
C620	VCKYCY1EF104Z	R	0.1 25V Ceramic	AA
C623	VCQYTA1HM222J	R	2200p 50V Mylar	AA
C624	VCQYTA1HM472J	R	4700p 50V Mylar	AB
C625	VCEA0A1HW105M	R	1 50V Electrolytic	AB
C626	VCKYCY1HF223Z	R	0.022 50V Ceramic	AB
C627	VCEA0A1HW106M	R	10 50V Electrolytic	AB
C628	VCEA0A1HW224M	R	0.22 50V Electrolytic	AB
C650	VCKYCY1EF104Z	R	0.1 25V Ceramic	AA
C654	VCEA0A1CW476M	R	47 16V Electrolytic	AB
C700	VCQYTA2AA103K	R	0.01 100V Mylar	AC
⚠ C701	RC-FZ008SGEZZ	R	0.1 AC250V Metallized Polypro Film	AD
C702	RC-KZ0160GEZZ	R	0.01 250V Ceramic	AC
C703	RC-KZ0160GEZZ	R	0.01 250V Ceramic	AC
C704	VCKYPA2HB102K	R	1000p 500V Ceramic	AA
C705	VCKYPA2HB102K	R	1000p 500V Ceramic	AA
C707	RC-EZ1044CEZZ	R	150 400V Electrolytic	AM
C708	RC-KZ0160GEZZ	R	0.01 250V Ceramic	AC
C709	VCQYTA1HM471J	R	470p 50V Mylar	AB
C711	RC-KZ0039CEZZ	R	680p 2kV Ceramic	AB
C712	VCQYTA1HM102J	R	1000p 50V Mylar	AA
C713	RC-KZ007JCEZZ	R	0.01 250V Ceramic	AC
C714	VCKYPH3DB561K	R	560p 2000V Ceramic	AC
C715	VCKYPA2HB102K	R	1000p 500V Ceramic	AA
C716	VCEA0A1EW107M	R	100 25V Electrolytic	AC
C717	VCQYTA1HM182J	R	1800p 50V Mylar	AA
C718	VCEAGA2AW475M	R	4.7 100V Electrolytic	AB
⚠ C721	RC-KZ0102GEZZ	R	680p 4kV Ceramic	AE
C751	VCEA0A1CW476M	R	47 16V Electrolytic	AB
C752	VCEA0A0JW107M	R	100 6.3V Electrolytic	AB
C753	VCKYPA2HB102K	R	1000p 500V Ceramic	AA
C754	VCEA0A1CW476M	R	47 16V Electrolytic	AB
C755	VCEA0A1CW108M	R	1000 16V Electrolytic	AD
C756	VCEA0A1CW108M	R	1000 16V Electrolytic	AD
C757	VCEA0A1HW105M	R	1 50V Electrolytic	AB
⚠ C759	VCKYPA1HB102K	R	1000p 50V Ceramic	AA
C760	RC-KZ0039CEZZ	R	680p 2kV Ceramic	AB
C761	RC-EZ0724CEZZ	R	100 160V Electrolytic	AG
C762	VCQYTA1HM473J	R	0.047 50V Mylar	AA
C802	VCEA0A1CW107M	R	100 16V Electrolytic	AC
C803	VCEA9M1CW107M	R	100 16V Electrolytic	AB
C804	VCKYCY1HB222K	R	2200p 50V Ceramic	AA
C805	VCKYCY1HB102K	R	1000p 50V Ceramic	AA
C806	VCKYCY1HB102K	R	1000p 50V Ceramic	AA
C807	VCKYCY1HB102K	R	1000p 50V Ceramic	AA
C808	VCEA0A1CW107M	R	100 16V Electrolytic	AC
C809	VCKYCY1CF474Z	R	0.47 16V Ceramic	AB
C810	VCKYCY1CF474Z	R	0.47 16V Ceramic	AB
C811	VCEA0A1CW107M	R	100 16V Electrolytic	AC
C812	VCFYFA1HA224J	R	0.22 50V Mylar	AB
C813	VCFYFA1HA224J	R	0.22 50V Mylar	AB
C814	VCKYCY1HB471K	R	470p 50V Ceramic	AA
C1001	VCEA0A0JW107M	R	100 6.3V Electrolytic	AB
C1003	VCEA0A1CW106M	R	10 16V Electrolytic	AB
C1004	VCKYCY1CF474Z	R	0.47 16V Ceramic	AB
C1005	VCKYCY1HF223Z	R	0.022 50V Ceramic	AB
C1006	VCEA0A1CW106M	R	10 16V Electrolytic	AB
C1007	VCEA0A1CW106M	R	10 16V Electrolytic	AB
C1008	VCCCCY1HH330J	R	33p 50V Ceramic	AA
C1009	VCCCCY1HH330J	R	33p 50V Ceramic	AA
C1010	VCEA0A0JW107M	R	100 6.3V Electrolytic	AB
C1011	VCKYCY1CF474Z	R	0.47 16V Ceramic	AB
C1012	VCKYCY1CF474Z	R	0.47 16V Ceramic	AB
C1013	VCEA0A0JW107M	R	100 6.3V Electrolytic	AB
C1014	VCEA0A1CW106M	R	10 16V Electrolytic	AB
C1016	VCQYTA1HM104J	R	0.1 50V Mylar	AA
C1018	VCKYCY1HB221K	R	220p 50V Ceramic	AA
C1019	VCEA9M1HW225M	R	2.2 50V Electrolytic	AB
C1021	VCKYCY1CF474Z	R	0.47 16V Ceramic	AB
C1022	VCKYCY1CF474Z	R	0.47 16V Ceramic	AB
C1023	VCEA0A1CW107M	R	100 16V Electrolytic	AC
C1024	VCEA0A1CW106M	R	10 16V Electrolytic	AB

RESISTORS

C334	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ2	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ9	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ10	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ13	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ15	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ16	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ21	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ25	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ26	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ27	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ30	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ31	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ32	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ33	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ34	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ39	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ41	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ43	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ51	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ53	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ56	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ61	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ64	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ66	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ67	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ68	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ69	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ71	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ74	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ75	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ79	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ80	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ83	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ84	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ85	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ87	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ88	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ90	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ94	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ96	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ103	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ107	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ201	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ202	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ205	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
RJ206	VRS-CY1JF000J	R	0 1/16W Metal Oxide	AA
R201	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R202	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R203	VRD-RM2HD102J	R	1k 1/2W Carbon	AA
R204	VRD-RM2HD102J	R	1k 1/2W Carbon	AA
R205	VRD-RA2BE680J	R	68 1/8W Carbon	AA
R206	VRS-CY1JF122J	R	1.2k 1/16W Metal Oxide	AA
R207	VRS-CY1JF221J	R	220 1/16W Metal Oxide	AA
R208	VRS-CY1JF122J	R	1.2k 1/16W Metal Oxide	AA
R209	VRS-CY1JF392J	R	3.9k 1/16W Metal Oxide	AA
R216	VRS-CY1JF681J	R	680 1/16W Metal Oxide	AA
R217	VRD-RA2BE392J	R	3.9k 1/8W Carbon	AA
R218	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA
R219	VRS-CY1JF391J	R	390 1/16W Metal Oxide	AA

Ref. No.	Part No.	★	Description	Code
R220	VRS-CY1JF101J	R 100	1/16W Metal Oxide	AA
R221	VRS-CY1JF102J	R 1k	1/16W Metal Oxide	AA
R222	VRS-CY1JF681J	R 680	1/16W Metal Oxide	AA
R223	VRD-RA2BE101J	R 100	1/8W Carbon	AB
R224	VRS-CY1JF750J	R 75	1/16W Metal Oxide	AA
R225	VRD-RA2EE680J	R 68	1/4W Carbon	AA
R229	VRD-RA2EE680J	R 68	1/4W Carbon	AA
R230	VRS-CY1JF561J	R 560	1/16W Metal Oxide	AA
R231	VRS-CY1JF561J	R 560	1/16W Metal Oxide	AA
R233	VRS-CY1JF181J	R 180	1/16W Metal Oxide	AA
R237	VRS-CY1JF272J	R 2.7k	1/16W Metal Oxide	AA
R238	VRS-CY1JF821J	R 820	1/16W Metal Oxide	AA
R239	VRS-CY1JF221J	R 220	1/16W Metal Oxide	AA
R300	VRS-CY1JF680J	R 68	1/16W Metal Oxide	AA
R306	VRS-CY1JF123J	R 12k	1/16W Metal Oxide	AA
R307	VRD-RA2BE392J	R 3.9k	1/8W Carbon	AA
R308	VRD-RA2BE332J	R 3.3k	1/8W Carbon	AA
R309	VRS-CY1JF392J	R 3.9k	1/16W Metal Oxide	AA
R310	VRD-RA2BE103J	R 10k	1/8W Carbon	AA
R311	VRS-CY1JF332J	R 3.3k	1/16W Metal Oxide	AA
R312	VRD-RA2BE101J	R 100	1/8W Carbon	AB
R313	VRD-RA2BE101J	R 100	1/8W Carbon	AB
R314	VRS-CY1JF224J	R 220k	1/16W Metal Oxide	AA
R315	VRS-CY1JF102J	R 1k	1/16W Metal Oxide	AA
R316	VRS-CY1JF682J	R 6.8k	1/16W Metal Oxide	AA
R318	VRS-CY1JF102J	R 1k	1/16W Metal Oxide	AA
R319	VRD-RA2BE682J	R 6.8k	1/8W Carbon	AA
R322	VRS-CY1JF101J	R 100	1/16W Metal Oxide	AA
R325	VRS-CY1JF821J	R 820	1/16W Metal Oxide	AA
R326	VRS-CY1JF332J	R 3.3k	1/16W Metal Oxide	AA
R327	VRS-CY1JF564J	R 560k	1/16W Metal Oxide	AA
R328	VRS-CY1JF564J	R 560k	1/16W Metal Oxide	AA
R329	VRS-CY1JF332J	R 3.3k	1/16W Metal Oxide	AA
R332	VRS-CY1JF561J	R 560	1/16W Metal Oxide	AA
R333	VRS-CY1JF103J	R 10k	1/16W Metal Oxide	AA
R334	VRS-CY1JF102J	R 1k	1/16W Metal Oxide	AA
R335	VRS-CY1JF561J	R 560	1/16W Metal Oxide	AA
R336	VRS-CY1JF102J	R 1k	1/16W Metal Oxide	AA
R337	VRS-CY1JF101J	R 100	1/16W Metal Oxide	AA
R338	VRS-CY1JF103J	R 10k	1/16W Metal Oxide	AA
R339	VRS-CY1JF564J	R 560k	1/16W Metal Oxide	AA
R340	VRS-CY1JF332J	R 3.3k	1/16W Metal Oxide	AA
R341	VRS-CY1JF332J	R 3.3k	1/16W Metal Oxide	AA
R342	VRS-CY1JF564J	R 560k	1/16W Metal Oxide	AA
R343	VRS-CY1JF104J	R 100k	1/16W Metal Oxide	AA
R344	VRS-CY1JF101J	R 100	1/16W Metal Oxide	AA
R345	VRS-CY1JF104J	R 100k	1/16W Metal Oxide	AA
R352	VRS-CY1JF102J	R 1k	1/16W Metal Oxide	AA
R358	VRS-CY1JF680J	R 68	1/16W Metal Oxide	AA
R376	VRS-CY1JF101J	R 100	1/16W Metal Oxide	AA
R377	VRS-CY1JF101J	R 100	1/16W Metal Oxide	AA
R378	VRN-VV3DBR12J	R 0.12	2W Metal Film	AB
R403	VRS-CY1JF101J	R 100	1/16W Metal Oxide	AA
R404	VRD-RA2BE820J	R 82	1/8W Carbon	AA
R406	VRS-CY1JF103J	R 10k	1/16W Metal Oxide	AA
R411	VRD-RA2BE820J	R 82	1/8W Carbon	AA
R412	VRS-CY1JF101J	R 100	1/16W Metal Oxide	AA
R501	VRS-CY1JF182J	R 1.8k	1/16W Metal Oxide	AA
R502	VRS-CY1JF182J	R 1.8k	1/16W Metal Oxide	AA
R503	VRD-RM2HD2R2J	R 2.2	1/2W Carbon	AA
R504	VRD-RM2HD150J	R 15	1/2W Carbon	AA
R505	VRG-PD2HD330J	R 33	1/2W	AC
R506	VRD-RA2BE124J	R 120k	1/8W Carbon	AA
R508	VRD-RM2HD221J	R 220	1/2W Carbon	AA
R509	VRD-RM2HD1R0J	R 1	1/2W Carbon	AA
R510	VRS-CY1JF101J	R 100	1/16W Metal Oxide	AA
R511	VRS-CY1JF101J	R 100	1/16W Metal Oxide	AA
R513	VRD-RA2BE393J	R 39k	1/8W Carbon	AA
R514	VRS-CY1JF101J	R 100	1/16W Metal Oxide	AA
R515	VRS-CY1JF272J	R 2.7k	1/16W Metal Oxide	AA
R516	VRD-RM2HD223J	R 22k	1/2W Carbon	AA
R602	VRN-VV3AB1R5J	R 1.5	1W Metal Film	AA
R603	VRD-RM2HD102J	R 1k	1/2W Carbon	AA
R604	VRD-RA2BE393J	R 39k	1/8W Carbon	AA
R605	VRD-RM2HD101J	R 100	1/2W Carbon	AA
R607	VRS-CY1JF102J	R 1k	1/16W Metal Oxide	AA
R608	VRS-CY1JF123J	R 12k	1/16W Metal Oxide	AA
R609	VRD-RA2BE273G	R 27k	1/8W Carbon	AA
R610	VRD-RA2BE153J	R 15k	1/8W Carbon	AA
R611	VRD-RA2EE823G	R 82k	1/4W Carbon	AA
R612	VRD-RA2BE103J	R 10k	1/8W Carbon	AA
R613	VRD-RA2BE103J	R 10k	1/8W Carbon	AA
R614	VRS-CY1JF103J	R 10k	1/16W Metal Oxide	AA
R615	VRS-KT3LB332J	R 3.3k	3W Metal Oxide	AC
R616	VRS-CY1JF102J	R 1k	1/16W Metal Oxide	AA
R617	VRD-RM2HD472J	R 4.7k	1/2W Carbon	AA
R618	VRS-KA3HG4R7K	R 4.7	5W Metal Oxide	AD
R619	VRD-RM2HD682J	R 6.8k	1/2W Carbon	AA
R622	VRS-VV3DB391J	R 390	2W Metal Oxide	AA
R624	VRD-RA2BE101J	R 100	1/8W Carbon	AB
R625	VRS-CY1JF184J	R 180k	1/16W Metal Oxide	AA
R626	VRS-CY1JF472J	R 4.7k	1/16W Metal Oxide	AA
R627	VRD-RM2HD4R7J	R 4.7	1/2W Carbon	AA
R628	VRD-RM2HD470J	R 47	1/2W Carbon	AA
R630	VRS-CY1JF100J	R 10	1/16W Metal Oxide	AA
R631	VRS-CY1JF391J	R 390	1/16W Metal Oxide	AA
R632	VRS-CY1JF273J	R 27k	1/16W Metal Oxide	AA
R633	VRS-CY1JF102J	R 1k	1/16W Metal Oxide	AA
R635	VRS-CY1JF822J	R 8.2k	1/16W Metal Oxide	AA
R636	VRS-CY1JF223J	R 22k	1/16W Metal Oxide	AA
R638	VRS-CY1JF333J	R 33k	1/16W Metal Oxide	AA
R701	VRW-KQ3NC3R9K	R 3.9	7W Cement	AE
R703	VRS-KT3LB473J	R 47k	3W Metal Oxide	AE
R705	VRD-RA2BE122J	R 1.2k	1/8W Carbon	AA
R706	VRD-RM2HD152J	R 1.5k	1/2W Carbon	AA
R707	VRS-KT3LB473J	R 47k	3W Metal Oxide	AE
R708	VRD-RM2HD272J	R 2.7k	1/2W Carbon	AA
R709	VRD-RA2BE681J	R 680	1/8W Carbon	AA
R710	VRN-VV3ABR39J	R 0.39	1W Metal Film	AA
R711	VRN-VV3ABR33J	R 0.33	1W Metal Film	AA
R712	VRG-PD2HD4R7J	R 4.7	1/2W	AC
⚠ R719	VRC-UA2HG825K	R 8.2M	1/2W Solid	AA
R721	VRD-RA2BE393J	R 39k	1/8W Carbon	AA
R723	VRD-RA2BE684J	R 680k	1/8W Carbon	AA
R726	VRC-UA2HG825K	R 8.2M	1/2W Solid	AA
R728	VRS-CY1JF272J	R 2.7k	1/16W Metal Oxide	AA
R750	VRD-RM2HD4R7J	R 4.7	1/2W Carbon	AA
R755	VRD-RA2BE222J	R 2.2k	1/8W Carbon	AA
R756	VRS-CY1JF152J	R 1.5k	1/16W Metal Oxide	AA
R758	VRD-RA2BE102J	R 1k	1/8W Carbon	AA
R759	VRS-CY1JF102J	R 1k	1/16W Metal Oxide	AA
R760	VRD-RA2BE471J	R 470	1/8W Carbon	AA
R761	VRD-RA2BE221J	R 220	1/8W Carbon	AA
R764	VRS-CY1JF272J	R 2.7k	1/16W Metal Oxide	AA
R766	VRD-RM2HD680J	R 68	1/2W Carbon	AA
R801	VRS-CY1JF101J	R 100	1/16W Metal Oxide	AA
R802	VRS-CY1JF101J	R 100	1/16W Metal Oxide	AA
R803	VRS-CY1JF101J	R 100	1/16W Metal Oxide	AA
R804	VRS-CY1JF101J	R 100	1/16W Metal Oxide	AA
R806	VRD-RA2BE123J	R 12k	1/8W Carbon	AA
R807	VRS-CY1JF103J	R 10k	1/16W Metal Oxide	AA
R808	VRS-CY1JF221J	R 220	1/16W Metal Oxide	AA
R809	VRD-RA2BE224J	R 220k	1/8W Carbon	AA
R812	VRS-CY1JF101J	R 100	1/16W Metal Oxide	AA
R813	VRS-CY1JF101J	R 100	1/16W Metal Oxide	AA
R1001	VRD-RA2BE221J	R 220	1/8W Carbon	AA
R1002	VRS-CY1JF331J	R 330	1/16W Metal Oxide	AA
R1003	VRS-CY1JF471J	R 470	1/16W Metal Oxide	AA
R1004	VRS-CY1JF821J	R 820	1/16W Metal Oxide	AA
R1005	VRD-RA2BE181J	R 180	1/8W Carbon	AA
R1011	VRS-CY1JF820J	R 82	1/16W Metal Oxide	AA
R1012	VRS-CY1JF391J	R 390	1/16W Metal Oxide	AA
R1013	VRS-CY1JF101J	R 100	1/16W Metal Oxide	AA
R1014	VRD-RA2BE101J	R 100	1/8W Carbon	AB
R1015	VRS-CY1JF332J	R 3.3k	1/16W Metal Oxide	AA
R1016	VRD-RA2BE101J	R 100	1/8W Carbon	AB
R1017	VRS-CY1JF332J	R 3.3k	1/16W Metal Oxide	AA
R1019	VRS-CY1JF472J	R 4.7k	1/16W Metal Oxide	AA
R1020	VRD-RA2BE101J	R 100	1/8W Carbon	AB
R1021	VRS-CY1JF153J	R 15k	1/16W Metal Oxide	AA
R1022	VRD-RA2BE101J	R 100	1/8W Carbon	AB
R1023	VRS-CY1JF101J	R 100	1/16W Metal Oxide	AA
R1024	VRS-CY1JF122J	R 1.2k	1/16W Metal Oxide	AA
R1025	VRS-CY1JF101J	R 100	1/16W Metal Oxide	AA
R1026	VRS-CY1JF224J	R 220k	1/16W Metal Oxide	AA
R1027	VRD-RA2BE101J	R 100	1/8W Carbon	AB

Ref. No.	Part No.	★	Description	Code
R1028	VRD-RA2BE101J	R	100 1/8W Carbon	AB
R1030	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA
R1031	VRD-RA2BE562J	R	5.6k 1/8W Carbon	AA
R1032	VRS-CY1JF332J	R	3.3k 1/16W Metal Oxide	AA
R1033	VRD-RA2BE102J	R	1k 1/8W Carbon	AA
R1034	VRD-RA2BE101J	R	100 1/8W Carbon	AB
R1035	VRS-CY1JF332J	R	3.3k 1/16W Metal Oxide	AA
R1036	VRS-CY1JF332J	R	3.3k 1/16W Metal Oxide	AA
R1037	VRD-RA2BE101J	R	100 1/8W Carbon	AB
R1038	VRD-RA2BE101J	R	100 1/8W Carbon	AB
R1039	VRS-CY1JF223J	R	22k 1/16W Metal Oxide	AA
R1040	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R1041	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R1043	VRS-CY1JF153J	R	15k 1/16W Metal Oxide	AA
R1044	VRS-CY1JF153J	R	15k 1/16W Metal Oxide	AA
R1045	VRD-RA2BE271J	R	270 1/8W Carbon	AA
R1046	VRD-RA2BE101J	R	100 1/8W Carbon	AB
R1065	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA
R1066	VRS-CY1JF102J	R	1k 1/16W Metal Oxide	AA
R1067	VRS-CY1JF101J	R	100 1/16W Metal Oxide	AA

BALUNES

FB305	RBLN-0037CEZZ	R	Balun, BLN-0037CE	AB
FB306	RBLN-0037CEZZ	R	Balun, BLN-0037CE	AB
FB501	RBLN-0037CEZZ	R	Balun, BLN-0037CE	AB
FB502	RBLN-0037CEZZ	R	Balun, BLN-0037CE	AB
FB602	RBLN-0037CEZZ	R	Balun, BLN-0037CE	AB
FB701	RBLN-0037CEZZ	R	Balun, BLN-0037CE	AB
FB702	RBLN-0037CEZZ	R	Balun, BLN-0037CE	AB
FB751	RBLN-0037CEZZ	R	Balun, BLN-0037CE	AB
FB752	RBLN-0037CEZZ	R	Balun, BLN-0037CE	AB

MISCELLANEOUS PARTS

RDA301	PRDAR0258PEFW	R	Heat Sink, IC302	AG
RDA302	PRDAR0160PEFW	R	Heat Sink, D309	AF
RDA501	PRDAR0283PEFW	R	Heat Sink, IC501	AF
RDA601	PRDAR0224PEFW	R	Heat Sink, Q602	AF
RDA800	PRDAR0260PEFW	R	Heat Sink, IC701	AH
⚠ FH701	QFSHD1014CEZZ	R	Fuse Holder	AC
⚠ FH702	QFSHD1013CEZZ	R	Fuse Holder	AC
⚠ F301	QFS-J2521CEZZ	R	Fuse	AF
⚠ F701	QFS-C3229CEZZ	R	Fuse, 3.15A 250V	AD
J405	QTANJ0644CEZZ	R	Terminal, 18 pin	AM
⚠ P301	QPLGN0441CEZZ	R	Plug, 4 pin	AB
P303	QPLGN0741CEZZ	R	Plug, 7 pin	AC
P502	QPLGN0603CEZZ	R	Plug, 6 pin	AB
P602	QPLGN0641CEZZ	R	Plug, 6 pin	AB
P701	QPLGN0207CEZZ	R	Plug, 2 pin	AA
P712	QPLGN0269GEZZ	R	Plug, 2 pin	AB
P1001	QPLGN0541CEZZ	R	Plug, 5 pin	AB
P1002	QPLGN0541CEZZ	R	Plug, 5 pin	AB
P1003	QPLGN0341CEZZ	R	Plug, 3 pin	AA
P1004	QPLGN0241CEZZ	R	Plug, 2 pin	AA
P1009	QPLGN0241CEZZ	R	Plug, 2 pin	AA
RMC1001	RRMCU0235CEZZ	R	Remote Receiver	AK
S701	QSW-P0591CEZZ	R	Switch	AQ
S1001	QSW-K0079GEZZ	R	Switch, CH UP	AB
S1002	QSW-K0079GEZZ	R	Switch, CH DOWN	AB
S1003	QSW-K0079GEZZ	R	Switch, VOL UP	AB
S1004	QSW-K0079GEZZ	R	Switch, VOL DOWN	AB
S1005	QSW-K0079GEZZ	R	Switch, MENU	AB
TP201	QLUGP0102PEZZ	R	Lug	AA
	LHLDP1066PE00	R	Holder	AC

DUNTK9990WET4
PWB-B:CRT UNIT

TRANSISTORS

Q870	VSBF422////-1	R	BF422	AC
Q871	VSBF422////-1	R	BF422	AC
Q872	VSBF422////-1	R	BF422	AC
Q883	VSBF421////-1	R	BF421	AC
Q885	VSBF421////-1	R	BF421	AC
Q887	VSBF421////-1	R	BF421	AC

Ref. No.	Part No.	★	Description	Code

DIODES

D811	VHD1SS119//-1	R	1SS119	AB
D812	VHD1SS119//-1	R	1SS119	AB
D880	VHD1SS119//-1	R	1SS119	AB
D881	VHD1SS119//-1	R	1SS119	AB
D882	VHD1SS119//-1	R	1SS119	AB
D883	VHD1SS82///1A	R	1SS82	AC
D884	VHD1SS82///1A	R	1SS82	AC
D885	VHD1SS82///1A	R	1SS82	AC
D886	VHD1SS82///1A	R	1SS82	AC
D887	VHD1SS82///1A	R	1SS82	AC
D888	VHD1SS82///1A	R	1SS82	AC

CAPACITORS

C871	VCKYPA1HB471K	R	470p	50V	Ceramic	AA
C872	VCKYPA1HB471K	R	470p	50V	Ceramic	AA
C873	VCKYPA1HB471K	R	470p	50V	Ceramic	AA
C875	VCKYPA2HB102K	R	1000p	500V	Ceramic	AA
C876	RC-KZ0150CEZZ	R	Capacitor			AB
C878	VCEAGA2EW106M	R	10	250V	Electrolytic	AC
C880	VCKYPA1HB471K	R	470p	50V	Ceramic	AA
C881	VCKYPA1HB471K	R	470p	50V	Ceramic	AA
C882	VCKYPA1HB471K	R	470p	50V	Ceramic	AA

RESISTORS

R879	VRD-RA2BE471J	R	470	1/8W	Carbon	AA
R880	VRD-RA2BE471J	R	470	1/8W	Carbon	AA
R881	VRD-RA2BE471J	R	470	1/8W	Carbon	AA
R882	VRS-VV3DB153J	R	15k	2W	Metal Oxide	AA
R883	VRD-RM2HD272J	R	2.7k	1/2W	Carbon	AA
R884	VRS-VV3DB153J	R	15k	2W	Metal Oxide	AA
R885	VRD-RM2HD272J	R	2.7k	1/2W	Carbon	AA
R886	VRS-VV3DB153J	R	15k	2W	Metal Oxide	AA
R887	VRD-RM2HD272J	R	2.7k	1/2W	Carbon	AA
R888	VRD-RA2BE471J	R	470	1/8W	Carbon	AA
R892	VRD-RA2BE102J	R	1k	1/8W	Carbon	AA
R893	VRD-RA2BE102J	R	1k	1/8W	Carbon	AA
R894	VRD-RA2BE102J	R	1k	1/8W	Carbon	AA
R898	VRD-RA2BE471J	R	470	1/8W	Carbon	AA
R899	VRD-RA2BE471J	R	470	1/8W	Carbon	AA

MISCELLANEOUS PARTS

P851	QPLGN0641CEZZ	R	Plug, 6 pin	AB
P882	QPLGN0541CEZZ	R	Plug, 5 pin	AB
⚠ SC881	QSOCV0842CEZZ	R	Socket	AH

DUNTKA253WET0
PWB-C:FRONT UNIT

RESISTORS

R1301	VRD-RA2BE471J	R	470	1/8W	Carbon	AA
R1302	VRD-RA2BE471J	R	470	1/8W	Carbon	AA
R3201	VRD-RA2BE561J	R	560	1/8W	Carbon	AA
R3202	VRD-RA2BE122J	R	1.2k	1/8W	Carbon	AA

MISCELLANEOUS PARTS

J1301	QJAKJ0047CEZZ	R	Jack, 7 pin	AD
J1401	QJAKE0143CEZZ	R	Jack, 3 pin R-In	AG
J1402	QJAKE0145CEZZ	R	Jack, 3 pin L-In	AF
J1403	QJAKE0144CEZZ	R	Jack, 3 pin V-In	AF
P1301	QPLGN0742CEZZ	R	Plug, 7 pin	AB
P1401	QPLGN0742CEZZ	R	Plug, 7 pin	AB
S3201	QSW-K0079GEZZ	R	Switch, 7 pin	AB

Ref. No.	Part No.	★	Description	Code

DUNTKA127WET0
PWB-D:MONO-BILINGUAL UNIT

INTEGRATED CIRCUIT

IC3300	VHiTDA9821/-1	R	TDA9821	AR

TRANSISTOR

Q3300	VS2SC1815GW-1	R	2SC1815GW	AB

FILTER

CF3300	RFiLC0338CEZZ	R	Filter, FiLC0338CE	AG

CAPACITORS

C3300	VCEA0A1HW225M	R	2.2	50V	Electrolytic	AB
C3301	VCEA0A1HW225M	R	2.2	50V	Electrolytic	AB
C3302	VCEA0A1HW225M	R	2.2	50V	Electrolytic	AB
C3303	VCEA0A1HW225M	R	2.2	50V	Electrolytic	AB
C3304	VCEA0A1CW107M	R	100	16V	Electrolytic	AC
C3305	VCQYTA1HM223K	R	0.022	50V	Mylar	AB
C3306	VCKYPA1HB222K	R	2200p	50V	Ceramic	AA
C3310	VCQYTA1HM223K	R	0.022	50V	Mylar	AB
C3312	VCKYPA1HF103Z	R	0.01	50V	Ceramic	AA
C3313	VCKYPA1HF103Z	R	0.01	50V	Ceramic	AA

RESISTORS

R3300	VRD-RA2BE122J	R	1.2k	1/8W	Carbon	AA
R3301	VRD-RA2BE122J	R	1.2k	1/8W	Carbon	AA
R3302	VRD-RA2BE273J	R	27k	1/8W	Carbon	AA
R3303	VRD-RA2BE153J	R	15k	1/8W	Carbon	AA
R3304	VRD-RA2BE561J	R	560	1/8W	Carbon	AA
R3307	VRD-RA2BE561J	R	560	1/8W	Carbon	AA
R3312	VRD-RA2BE101J	R	100	1/8W	Carbon	AB
R3313	VRD-RA2BE102J	R	1k	1/8W	Carbon	AA

MISCELLANEOUS PARTS

P3300	QPLGZ0610CEZZ	R	Plug, 6 pin	AB
P3301	QPLGZ0810CEZZ	R	Plug, 8 pin	AD

MISCELLANEOUS PARTS

⚠ ACC701	QACCZ3008PEZZ	R	AC Cord		AN
SP301	VSP9050PB25WA	R	Speaker		AM
SP302	VSP9050PB25WA	R	Speaker		AM
	GBFL-0021KJ00		Speaker Baffle(L)		
	GBFL-0022KJ00		Speaker Baffle(R)		
	QANTR0018PEZZ	R	Rod Antenna		AQ
	QCNW-0028KJZZ		Connecting Wire(HP)		
	QCNW-0029KJZZ		Connecting Wire(GS, GA, GY)		
	QCNW-2377PEZZ	R	Connecting Wire(H)		AE
	QCNW-2423PEN1	R	Connecting Wire(K)		AF

SUPPLIED ACCESSORIES

ACCESSORIES

	RRMCG0028KJSA		Infrared R-C	
	TiNS-0116KJZZ		Operation Manual	
	QPLGJ0113CEZZ	R	Plug	AG

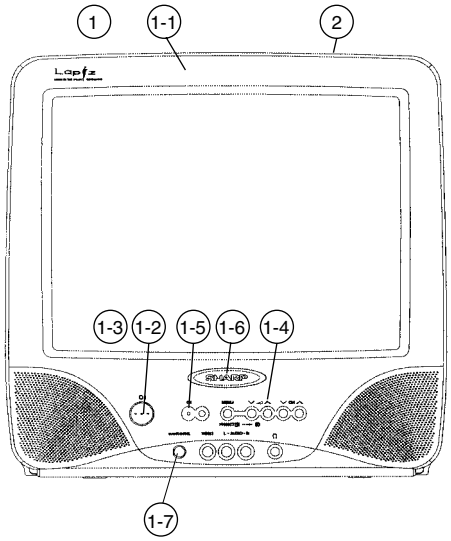
Ref. No.	Part No.	★	Description	Code

PACKING PARTS
(NOT REPLACEMENT ITEM)

	SPAKC0108KJZZ	Packing Case
	SPAKP0677CEZZ	Wrapping Paper
	SPAKX0071KJZZ	Packing Add.
	SPAKX0072KJZZ	Packing Add.
	SSAKA0230CEZZ	Polyethylene Bag

CABINET PARTS

1	CCABA0090WEA0		Front Cabinet Assembly
1-1	*Not Available*	-	Front Cabinet
1-2	JBTN-0045KJSA		Button
1-3	MSPRC0003KJFW		Spring
1-4	JBTN-0046KJSA		Button
1-5	HDECQ0041KJSA		Decoration Plate
1-6	HBDGB0011KJSA		Badge
1-7	JBTN-0047KJSA		Button
2	GCABB0057KJKA		Cabinet



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